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PART B

## SOLAR - GEOPHYSICAL DATA

ISSUED

OCTOBER 1965

U. S. DEPARTMENT OF COMMERCE

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

INSTITUTE FOR TELECOMMUNICATION SCIENCES AND AERONOMY

(FORMERLY CENTRAL RADIO PROPAGATION LABORATORY)

BOULDER, COLORADO



ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
INSTITUTE FOR TELECOMMUNICATION SCIENCES AND AERONOMY  
(FORMERLY CENTRAL RADIO PROPAGATION LABORATORY)  
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SOLAR - GEOPHYSICAL DATA

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The descriptive text was republished in November 1964. Addenda have been given in the introduction to each of the CRPL-F Part B reports, December 1964 through September 1965.

#### Solar Flares:

The more complete listing of solar flares for June 1965 which would normally appear in this issue will be published in the next issue. Data from several observatories were not received in time for publication.

#### Ionospheric Effects -- SFD:

In order to better explain the SFD portion of the Ionospheric Effect of Solar Flares Table the following two sentences should be added to the first paragraph on page 14 of the November 1964 Descriptive Text:

The SFD column gives the largest frequency deviation observed, for the various paths and frequencies used, during a given event in tenths of a cycle per second (i.e. 014 = 1.4 cycles per second).

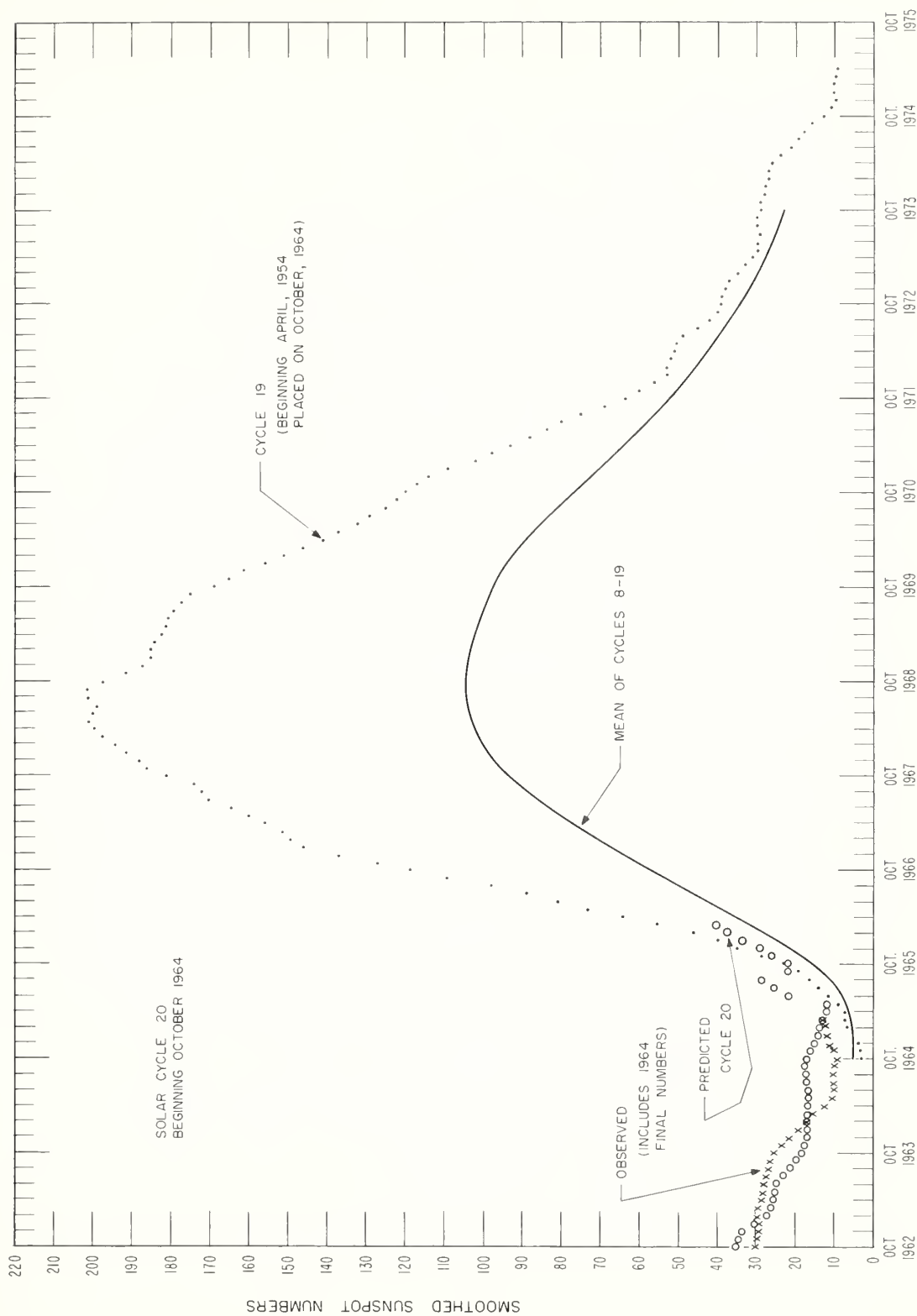
The transmitter locations are: WWV = Beltsville, Maryland; WWVH = Maui, Hawaii; KKE = Sunset, Colorado; MN = Monrovia, Liberia.

## DAILY SOLAR INDICES

| August<br>1965 | American Relative<br>Sunspot Numbers<br>$R_A'$ |
|----------------|--|
| 1              | 0  |
| 2              | 0  |
| 3              | 7  |
| 4              | 2  |
| 5              | 0  |
| 6              | 0  |
| 7              | 7  |
| 8              | 6  |
| 9              | 9  |
| 10             | 10   |
| 11             | 10   |
| 12             | 14   |
| 13             | 1  |
| 14             | 1  |
| 15             | 0  |
| 16             | 0  |
| 17             | 0  |
| 18             | 3  |
| 19             | 1  |
| 20             | 2  |
| 21             | 0  |
| 22             | 0  |
| 23             | 0  |
| 24             | 0  |
| 25             | 0  |
| 26             | 3  |
| 27             | 16   |
| 28             | 12   |
| 29             | 3  |
| 30             | 12   |
| 31             | 19   |
| Mean:          | 4.5  |

| Sept.<br>1965 | Zürich Provisional<br>Relative Sunspot<br>Numbers<br>$R_Z$ | Daily Values Solar<br>Flux at 2800 Mc,<br>Ottawa, Canada<br>Flux |       |
|---------------|--|--|-------|
|               |  | S  | $S_A$ |
| 1             | 17   | 75.4   | 76.8  |
| 2             | 20   | 75.9   | 77.3  |
| 3             | 21   | 76.6   | 77.9  |
| 4             | 22   | 76.7   | 78.0  |
| 5             | 22   | 78.7   | 80.0  |
| 6             | 19   | 77.1   | 78.3  |
| 7             | 23   | 77.7   | 78.9  |
| 8             | 22   | 78.6   | 79.8  |
| 9             | 18   | 76.1   | 77.2  |
| 10            | 15   | 75.6   | 76.7  |
| 11            | 19   | 75.7   | 76.7  |
| 12            | 17   | 75.3   | 76.3  |
| 13            | 17   | 75.0   | 75.9  |
| 14            | 8  | 75.2   | 76.1  |
| 15            | 8  | 74.9   | 75.7  |
| 16            | 10   | 73.7   | 74.5  |
| 17            | 8  | 73.8   | 74.5  |
| 18            | 9  | 73.0   | 73.7  |
| 19            | 7  | 72.8   | 73.4  |
| 20            | 0  | 72.8   | 73.4  |
| 21            | 0  | 72.5   | 73.1  |
| 22            | 0  | 71.2   | 71.7  |
| 23            | 11   | 71.8   | 72.3  |
| 24            | 17   | 76.1   | 76.6  |
| 25            | 13   | 75.8   | 76.2  |
| 26            | 17   | 77.0   | 77.4  |
| 27            | 18   | 78.4   | 78.7  |
| 28            | 23   | 80.5   | 80.8  |
| 29            | 37   | 87.3   | 87.6  |
| 30            | 52   | 89.0*  | 89.3* |
| Mean:         | 16.3   | 76.3   | 77.2  |

\* Corrected for burst



PREDICTED AND OBSERVED SUNSPOT NUMBERS

## CALCIUM PLAGE AND SUNSPOT REGIONS

SEPTEMBER 1965

| SEPT.<br>1965 | LAT. | MCMATH<br>PLAGE<br>NUMBER | RETURN<br>OF<br>REGION | CALCIUM PLAGE DATA |       |         |                         |                       |                         | SUNSPOT DATA |       |         |
|---------------|------|---------------------------|------------------------|--------------------|-------|---------|-------------------------|-----------------------|-------------------------|--------------|-------|---------|
|               |      |                           |                        | CMP VALUES         |       | HISTORY | AGE<br>(ROTA-<br>TIONS) | DATE<br>FIRST<br>SEEN | DURA-<br>TION<br>(DAYS) | CMP VALUES   |       | HISTORY |
|               |      |                           |                        | AREA               | INT.  |         |                         |                       |                         | AREA         | COUNT |         |
| 1.2           | N39  | 7964                      | New                    | (100)              | (1.5) | b \ d   | 1                       | 8/27                  | 4                       |              |       |         |
| 1.7           | S36  | 7970 (1)                  | New                    | 200                | 1.0   | b - d   | 1                       | 9/1                   | 1                       |              |       |         |
| 5.4           | N36  | 7974                      | New                    | (100)              | (1.5) | b - d   | 1                       | 9/3                   | 2                       |              |       |         |
| 5.7           | S29  | 7969                      | 7931                   | 500                | 1.0   | ℓ ∧ d   | 2                       | 8/30                  | 9                       |              |       |         |
| 6.2           | N25  | 7975 (3)                  | 7932                   | 400                | 1.5   | ℓ - d   | 2                       | <9/5                  | > 2                     |              |       |         |
| 7.1           | S32  | 7979 (1)                  | New                    | (200)              | (1.5) | b - d   | 1                       | 9/9                   | 1                       |              |       |         |
| 7.1           | N27  | 7980 (1)                  | New                    | (200)              | (1.5) | b - d   | 1                       | 9/9                   | 1                       |              |       |         |
| 8.2           | N28  | 7971 (2)                  | New                    | 1400               | 3.0   | ℓ ∧ ℓ   | 1                       | 9/1                   | 14                      | 100          | 26    | ℓ ∧ ℓ   |
| 8.4           | S04  | 7973 (1)                  | New                    | (200)              | (1.5) | b - d   | 1                       | 9/3                   | 1                       |              |       |         |
| 9.2           | N36  | 7976                      | New                    | (500)              | (2.0) | b - d   | 1                       | 9/5                   | 9                       | 10           | 6     | b - d   |
| 9.2           | N27  | 7978 (1)                  | New                    | (100)              | (2.0) | b - d   | 1                       | 9/7                   | 1                       |              |       |         |
| 9.7           | N24  | 7977 (1)                  | New                    | (100)              | (2.0) | b - d   | 1                       | 9/5                   | 1                       |              |       |         |
| 12.0          | S20  | 7987 (1)                  | New                    | (100)              | (1.5) | b - d   | 1                       | 9/14                  | 1                       |              |       |         |
| 12.2          | S41  | 7988 (1)                  | New                    | (300)              | (1.5) | b - d   | 1                       | 9/14                  | 1                       |              |       |         |
| 13.3          | N22  | 7981                      | New                    | 100                | 1.0   | b \ d   | 1                       | 9/10                  | 4                       |              |       |         |
| 14.7          | S06  | 7984 (1)                  | New                    | (100)              | (1.5) | b - d   | 1                       | 9/12                  | 1                       |              |       |         |
| 15.0          | N26  | 7990                      | New                    | (700)              | (1.0) | b \ ℓ   | 1                       | 9/18                  | 3                       |              |       |         |
| 15.7          | N25  | 7982 (1)                  | New                    | (200)              | (1.5) | b - d   | 1                       | 9/11                  | 1                       |              |       |         |
| 15.8          | N28  | 7986 (1)                  | New                    | (100)              | (1.5) | b - d   | 1                       | 9/13                  | 1                       |              |       |         |
| 16.4          | N16  | 7985 (1)                  | New                    | (100)              | (1.5) | b - d   | 1                       | 9/12                  | 1                       |              |       |         |
| 18.1          | N25  | 7983                      | 7962                   | 1800               | 3.0   | ℓ ∧ ℓ   | 2                       | 9/11                  | 14                      | 10           | 6     | ℓ - d   |
| 21.1          | N36  | 7994                      | New                    | (100)              | (2.0) | b - d   | 1                       | 9/23                  | 2                       |              |       |         |
| 21.5          | N26  | 7995                      | New                    | (500)              | (3.5) | b / ℓ   | 1                       | 9/23                  | 5                       | (20)         | (10)  | b / ℓ   |
| 21.9          | N05  | 7996 (1)                  | New                    | (100)              | (1.5) | b - d   | 1                       | 9/23                  | 1                       |              |       |         |
| 22.0          | N29  | 7989 (4)                  | 7956                   | 1600               | 1.5   | ℓ \ ℓ   | 2                       | <9/17                 | >12                     |              |       |         |
| 22.3          | N12  | 7993 (1)                  | New                    | 100                | 2.0   | b - d   | 1                       | 9/22                  | 1                       |              |       |         |
| 22.3          | N12  | 8001 (1)                  | New                    | (200)              | (2.0) | b - d   | 1                       | 9/25                  | 1                       |              |       |         |
| 23.8          | N41  | 7997 (1)                  | New                    | 100                | 2.0   | b - d   | 1                       | 9/23                  | 1                       |              |       |         |
| 24.3          | N22  | 7991                      | New                    | (100)              | (1.0) | b - d   | 1                       | 9/19                  | 3                       |              |       |         |
| 25.2          | N26  | 8007 (1)                  | New                    | (100)              | (1.0) | b - d   | 1                       | 9/27                  | 1                       |              |       |         |
| 26.0          | N06  | 7992                      | 7968                   | (400)              | (2.0) | ℓ - d   | 2                       | 9/19                  | 12                      |              |       |         |
| 29.2          | N31  | 8003                      | New                    | 200                | 1.5   | b \ d   | 1                       | 9/27                  | 4                       | (10)         | (2)   | b - d   |
| 29.4          | N34  | 7998 (1)                  | New                    | (200)              | (1.5) | b - d   | 1                       | 9/24                  | 1                       |              |       |         |
| 29.5          | N05  | 7999                      | New                    | (100)              | (1.5) | b - d   | 1                       | 9/24                  | 2                       |              |       |         |
| 30.1          | N18  | 8000                      | New                    | (200)              | (1.0) | ℓ - d   | 1                       | 9/24                  | 2                       |              |       |         |
| 30.2          | N11  | 8011                      | New                    | (100)              | (1.5) | b - d   | 1                       | 10/3                  | 1                       |              |       |         |

(1) These small and ephemeral plages were seen on the disk for only one day.

(2) Region 7971 is a new plage which has developed near the position of plage 7932 of the previous rotation.

(3) Region 7975 contains the remnants of region 7932.

(4) Region 7989 is primarily a return of plage 7956 of the previous rotation although part of 7989 also contains weak remnants of old plage 7958.

No calcium plage observations were secured at the McMath-Hulbert Observatory on September 8, 16 and 26, 1965.



# MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

11b

SEPTEMBER 1965

| SEPT.<br>1965 | TIME<br>MEAS.<br>UT | LAT.       | MER.<br>DIST | TYPE                          | No.            | SEPT.<br>1965 | TIME<br>MEAS.<br>UT | LAT.              | MER.<br>DIST.     | TYPE                                 | No.                     |
|---------------|---------------------|------------|--------------|-------------------------------|----------------|---------------|---------------------|-------------------|-------------------|--------------------------------------|-------------------------|
| 1             | 2200                | N25<br>N02 | W32<br>W35   | $\alpha p$<br>$\beta p^*$     | 15951<br>15952 | 15            | 1435                | N23               | E29               | $\alpha p$                           | 15955                   |
| 2             | 2345                | N02<br>N26 | W50<br>E66   | $\beta p^*$<br>$\alpha p$     | 15952<br>15953 | 16            | 1430                | N23               | E16               | $\alpha p$                           | 15955                   |
| 3             | No Obs.             |            |              |                               |                | 17-19         | No Obs.             |                   |                   |                                      |                         |
| 4             | 0040                | N03<br>N25 | W65<br>E56   | $\beta p^*$<br>$\beta f$      | 15952<br>15953 | 20            | 2345                | N24               | W38               | $\alpha p$                           | 15955                   |
| 5-7           | No Obs.             |            |              |                               |                | 21-22         | No Spots            |                   |                   |                                      |                         |
| 8             | 1620                | N26        | W08          | $\beta p$                     | 15953          | 23            | 2000                | N25               | W31               | $\beta p$                            | 15956                   |
| 9             | 1700                | N26<br>N33 | W21<br>W09   | $\beta p$<br>$\alpha f$       | 15953<br>15954 | 24            | 1435                | N25               | W42               | $\beta p$                            | 15956                   |
| 10            | 2205                | N26        | W37          | $\beta p$                     | 15953          | 25            | No Obs.             |                   |                   |                                      |                         |
| 11            | No Obs.             |            |              |                               |                | 26            | 1645                | N26<br>N19        | W74<br>E79        | $\alpha p$<br>$\alpha p$             | 15956<br>15957          |
| 12            | 0040                | N26<br>N24 | W55<br>E76   | $\alpha p$<br>$\alpha f$      | 15953<br>15955 | 27            | 1615                | N18<br>N32<br>S28 | E70<br>E19<br>E79 | $\beta p$<br>$\beta p$<br>$\alpha f$ | 15957<br>15958<br>15959 |
| 13            | 0025                | N25<br>N24 | W68<br>E64   | $\alpha p$<br>$\alpha f$      | 15953<br>15955 | 28            | No Obs.             |                   |                   |                                      |                         |
| 14            | 0000                | N26<br>N24 | W80<br>E50   | $\alpha p$<br>$\alpha p^{**}$ | 15953<br>15955 | 29            | 1615                | N21               | E44               | $\beta \gamma$                       | 15957                   |
| 14            | 2355                | N23        | E37          | $\alpha p$                    | 15955          | 30            | No Obs.             |                   |                   |                                      |                         |

\* Old cycle (19)

\*\* Two previous observations affected by limb proximity

# PROVISIONAL CORONAL LINE EMISSION INDICES

SEPTEMBER 1965

The Coronal Indices will be published at a later date because the microdensitometer is undergoing repairs.

# SOLAR FLARES

SEPTEMBER 1965

| OBSERVATORY | DATE<br>SEPT<br>1965 | OBSERVED<br>UNIVERSAL TIME |        | LOCATION       |             |                            | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS<br>COND | MEASUREMENTS |                        |                        | REMARKS |                    |                 |
|-------------|----------------------|----------------------------|--------|----------------|-------------|----------------------------|-------------------------------|----------------------|-------------|--------------|------------------------|------------------------|---------|--------------------|-----------------|
|             |                      | START                      | END    | APPROX<br>LAT. | MER<br>DIST | MC-MATH<br>PLACE<br>REGION |                               |                      |             | TIME<br>U T  | MEAS<br>AREA<br>Sq Deg | CORR<br>AREA<br>Sq Deg |         | MAX<br>WIDTH<br>Ha | MAX<br>INT<br>% |
| KAND        | 01                   | 0912                       | 0922   | N27 E90        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| KAND        | 01                   | 1053                       | 1112   | N30 E90        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| KAND        | 01                   | 1054                       | 1107   | N03 W24        |             | 7968                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| HALE        | 01                   | 2202 E                     | 2232 D | N32 W90        |             | 7958                       |                               | 1-                   | 2 P         | 2206         | .20                    |                        |         |                    |                 |
| OTTA        | 02                   | 1239                       | 1254 D | N04 W42        |             | 7968                       |                               | 1-                   | 1 C         | 1245         | .35                    | .40                    |         |                    | H               |
| OTTA        | 02                   | 1343 E                     | 1355 D | N05 W42        |             | 7968                       |                               | 1-                   | 1 C         | 1347         | .70                    | .80                    |         |                    | H               |
| OTTA        | 02                   | 1511                       | 1523   | N23 W44        |             | 7961                       |                               | 1-                   | 2 C         | 1513         | .35                    | .41                    |         |                    | D               |
| MCMA        | 02                   | 1628 E                     | 1653   | N02 W48        |             | 7968                       |                               | 1-                   | 2 P         | 1630         | .30                    | .40                    |         |                    | D               |
| HUAN        | 02                   | 1715 E                     | 1725   | N01 W46        |             | 7968                       |                               | 1-                   | S           |              |                        |                        |         |                    | D               |
| LOCK        | 03                   | 1647                       | 1706   | N26 E56        |             | 7971                       |                               | 1-                   | C           | 1652         | .30                    | .50                    |         | 20                 | F               |
| OTTA        | 03                   | 1649 E                     | 1654 D | N27 E62        |             | 7971                       |                               | 1-                   | 2 C         | 1653         | .47                    | .72                    |         |                    | E               |
| MCMA        | 03                   | 1651                       | 1710   | N27 E63        |             | 7971                       |                               | 1-                   | 2 C         | 1656         | .50                    | 1.10                   |         |                    | D               |
| MCMA        | 03                   | 2100                       | 2112 D | N27 E61        |             | 7971                       |                               | 1-                   | 1 P         | 2100         | .30                    | .60                    |         |                    | D               |
| WEND        | 04                   | 0552 E                     | 0723 D | N29 W63        |             | 7961                       | 91 D                          | 1+                   | 2 C         | 1800         | .30                    | .50                    |         |                    | E               |
| MCMA        | 04                   | 1759 E                     | 1814   | N27 E49        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| MANI        | 05                   | 0030 E                     | 0055   | N26 E40        |             | 7971                       |                               | 1-                   | 2           | 0048         | .40                    | .50                    |         |                    |                 |
| MANI        | 05                   | 0210                       | 0312   | N26 E39        |             | 7971                       |                               | 1-                   | 2           | 0225         | .80                    | .96                    |         |                    |                 |
| MANI        | 05                   | 0403 E                     | 0425   | N26 E39        |             | 7971                       |                               | 1-                   | 2           | 0407         | .40                    | .50                    |         |                    |                 |
| MANI        | 05                   | 0433                       | 0443   | N26 E38        |             | 7971                       |                               | 1-                   | 2           | 0436         | .30                    | .36                    |         |                    |                 |
| MANI        | 05                   | 0455 E                     | 0515   | N35 E03        |             | 7975                       |                               | 1-                   | 2           | 0456         | .25                    | .26                    |         |                    |                 |
| MANI        | 05                   | 0509                       | 0528   | N26 E38        |             | 7971                       |                               | 1-                   | 2           | 0515         | .50                    | .60                    |         |                    |                 |
| CAPS        | 05                   | 0609 E                     | 0616   | N26 E06        |             | 7975                       |                               | 1-                   | 3           | 0609         | .60                    | .60                    |         | 190                | CGH             |
| WEND        | 05                   | 0742 E                     | 0756 D | N26 E39        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| KANZ        | 05                   | 0745 E                     |        | N26 E38        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    | D               |
| CAPS        | 05                   | 0812                       | 0825   | N28 E43        |             | 7971                       | 22                            | 1                    | 3           | 0815         | .90                    | 1.30                   |         | 190                | D               |
| WEND        | 05                   | 0815                       | 0834   | N26 E42        |             | 7971                       | 35 D                          | 1+                   |             |              |                        |                        |         |                    | D               |
| KANZ        | 05                   | 0815 E                     | 0850   | N26 E40        |             | 7971                       | 15 D                          | 1                    |             |              |                        |                        |         |                    | A               |
| WEND        | 05                   | 0836                       | 0851 D | N26 E38        |             | 7971                       | 22 D                          | 1                    |             |              |                        |                        |         |                    | D               |
| KANZ        | 05                   | 0856 E                     | 0918 D | N03 W87        |             | 7968                       | 32 D                          | 1                    |             |              |                        |                        |         |                    | D               |
| WEND        | 05                   | 0941                       | 1013 D | N26 E39        |             | 7971                       | 24                            | 1                    |             |              |                        |                        |         |                    | D               |
| KANZ        | 05                   | 0946 E                     | 1010   | N26 E37        |             | 7971                       | 40 D                          | 1+                   |             |              |                        |                        |         |                    | F               |
| WEND        | 05                   | 1202                       | 1242 D | N26 E38        |             | 7971                       |                               | 1-                   | 1 C         | 1213         | 1.06                   | 1.18                   |         |                    | CE              |
| OTTA        | 05                   | 1210                       | 1246   | N27 E36        |             | 7971                       |                               | 1-                   | 3           | 1214         | .90                    | 1.20                   |         | 180                |                 |
| CAPS        | 05                   | 1211 E                     | 1222   | N26 E37        |             | 7971                       |                               | 1-                   | 1 C         | 1350         | .46                    | 1.12                   |         |                    | DH              |
| OTTA        | 05                   | 1345                       | 1359   | N23 W80        |             | 7961                       |                               | 1-                   | 2 C         | 1758         | .20                    | .30                    |         |                    | D               |
| MCMA        | 05                   | 1755                       | 1850   | N27 E32        |             | 7971                       |                               | 1-                   | 2 C         | 2034         | .30                    | .40                    |         |                    |                 |
| MCMA        | 05                   | 2033                       | 2043   | N27 E31        |             | 7971                       |                               | 1-                   |             |              |                        |                        |         |                    |                 |
| OTTA        | 06                   | 1338                       | 1401   | N22 E03        |             | 7975                       |                               | 1-                   | 2 C         | 1345         | .16                    | .16                    |         |                    | E               |
| OTTA        | 06                   | 1350                       | 1406   | N22 E01        |             | 7975                       |                               | 1-                   | 2 C         | 1354         | .12                    | .12                    |         |                    | D               |
| KANZ        | 06                   | 1341 E                     |        | N28 E21        |             | 7971                       |                               | 1-                   | 3 C         | 1344         | .10                    | .10                    |         |                    | D               |
| MCMA        | 06                   | 1343                       | 1354   | N27 E22        |             | 7971                       |                               | 1-                   | 3 C         | 1359         | .10                    | .10                    |         |                    | D               |
| MCMA        | 06                   | 1358                       | 1405   | N27 E18        |             | 7971                       |                               | 1-                   | 2 C         | 1610         | .40                    | .40                    |         |                    | E               |
| MCMA        | 06                   | 1605                       | 1620   | N27 E16        |             | 7971                       |                               | 1-                   | 3 C         | 2112         | .10                    | .10                    |         |                    | H               |
| HALE        | 06                   | 2107                       | 2119   | N25 E12        |             | 7971                       |                               | 1-                   | 3 C         | 2156         | .10                    | .10                    |         |                    |                 |
| HALE        | 06                   | 2155                       | 2200   | N25 E12        |             | 7971                       |                               | 1-                   | 3 C         | 2156         | .10                    | .10                    |         |                    |                 |
| HALE        | 06                   | 2318                       | 2323   | N25 E10        |             | 7971                       |                               | 1-                   | 3 C         | 2321         | .10                    | .10                    |         |                    |                 |

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| OBSERVATORY | DATE<br>SEPT<br>1965 | OBSERVED<br>UNIVERSAL TIME |      | LOCATION       |                         | DUR-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | TIME<br>U T | MEASUREMENTS           |                        |                                | MAX<br>INT<br>° | REMARKS |
|-------------|----------------------|----------------------------|------|----------------|-------------------------|------------------------------|----------------------|---------------|-------------|------------------------|------------------------|--------------------------------|-----------------|---------|
|             |                      | START                      | END  | APPROX<br>LAT. | MATH<br>PLAGE<br>REGION |                              |                      |               |             | MEAS<br>AREA<br>Sq Deg | CORR<br>AREA<br>Sq Deg | MAX<br>WIDTH<br>H <sub>g</sub> |                 |         |
| HALE        | 06                   | 2326                       | 2341 | N26            | E10                     | 7971                         | 1-                   | 3 C           | 2331        | .10                    | .10                    |                                |                 | H       |
| HALE        | 07                   | 0107                       | 0116 | N26            | E09                     | 7971                         | 1-                   | 3 C           | 0109        | .10                    | .10                    |                                |                 | L       |
| KANZ        | 07                   | 0955                       | E    | N26            | E08                     | 7971                         | 1-                   |               |             |                        |                        |                                |                 | DH      |
| OTTA        | 07                   | 1255                       | 1314 | N25            | E05                     | 7971                         | 1-                   | 1 C           | 1312        | .59                    | .59                    |                                |                 | H       |
| —           | 07                   | 1611                       | E    | N25            | E03                     | 7971                         | 1-                   | 1 C           | 1614        | .53                    | .53                    |                                | 18              |         |
| SACP        | 07                   | 1611                       | 1621 | N26            | E03                     | 7971                         | 1-                   | 1 C           |             | .47                    | .47                    |                                |                 |         |
| OTTA        | 07                   | 1640                       | 1644 | N24            | E03                     | 7971                         | 1-                   | 1 C           | 1643        | .47                    | .47                    |                                | 17              | F       |
| SACP        | 07                   | 1705                       | 1713 | N26            | E03                     | 7971                         | 1-                   | 1 C           |             | .30                    | .30                    |                                | 20              |         |
| —           | 07                   | 1940                       | 2003 | N24            | E03                     | 7971                         | 1-                   | 1 C           | 1950        | .20                    | .20                    |                                | 20              |         |
| —           | 07                   | 1942                       | 1957 | N26            | W03                     | 7971                         | 1-                   | 1 C           |             | .17                    | .17                    |                                | 20              |         |
| WEND        | 08                   | 1525                       | E    | N25            | W09                     | 7971                         | 1-                   |               |             |                        |                        |                                |                 |         |
| SACP        | 08                   | 1528                       | 1532 | N26            | W12                     | 7971                         | 1-                   | 1 C           |             | .51                    | .51                    |                                | 20              |         |
| SACP        | 08                   | 1611                       | 1621 | N29            | W04                     | 7971                         | 1-                   | 1 C           |             | .78                    | .78                    |                                | 19              |         |
| SACP        | 08                   | 1942                       | 1957 | N26            | W10                     | 7971                         | 1-                   | 1 C           |             | .52                    | .52                    |                                | 20              |         |
| —           | 08                   | 2034                       | 2137 | N25            | W09                     | 7971                         | 63                   | 1 C           |             | 2.66                   | 2.66                   |                                | 21              |         |
| —           | 08                   | 2035                       | 2129 | N25            | W10                     | 7971                         | 1-                   | 1 C           | 2101        | 1.60                   | 1.60                   |                                | 20              | L       |
| —           | 08                   | 2036                       | E    | N24            | W09                     | 7971                         | 1-                   | 1 P           | 2057        | .80                    | .80                    |                                | 20              | F       |
| HALE        | 08                   | 2036                       | 2133 | N24            | W08                     | 7971                         | 1-                   | 1 C           | 2109        | .60                    | .60                    |                                | 20              | F       |
| —           | 08                   | 2055                       | 2145 | N22            | W08                     | 7971                         | 1-                   | 1 C           | 2328        | .20                    | .20                    |                                | 20              |         |
| —           | 08                   | 2324                       | 2344 | N22            | W19                     | 7971                         | 1-                   | 1 C           |             | .43                    | .43                    |                                | 20              |         |
| —           | 08                   | 2325                       | 2351 | N23            | W20                     | 7971                         | 1-                   | 1 C           |             | .20                    | .20                    |                                | 20              |         |
| —           | 08                   | 2326                       | 2355 | N22            | W19                     | 7971                         | 1-                   | 2 C           | 2329        | .20                    | .20                    |                                | 20              |         |
| HALE        | 09                   | 0034                       | 0046 | N24            | W15                     | 7971                         | 1-                   | 1 C           | 0035        | .40                    | .40                    |                                |                 | F       |
| HALE        | 09                   | 0308                       | 0317 | N25            | W18                     | 7971                         | 1-                   | 1 C           | 0312        | .20                    | .20                    |                                |                 |         |
| HALE        | 09                   | 0407                       | 0411 | N25            | W18                     | 7971                         | 1-                   | 1 C           | 0409        | .20                    | .20                    |                                |                 |         |
| HALE        | 09                   | 0411                       | 0415 | N23            | W22                     | 7971                         | 1-                   | 1 P           | 0414        | .20                    | .20                    |                                |                 |         |
| MANI        | 09                   | 0556                       | 0615 | N27            | W14                     | 7971                         | 1-                   | 2             | 0603        | .40                    | .40                    |                                |                 |         |
| WEND        | 09                   | 0808                       | 0822 | N26            | W16                     | 7971                         | 14                   | 1             |             |                        |                        |                                |                 |         |
| —           | 09                   | 0815                       | E    | N26            | W17                     | 7971                         | 30 D                 | 1             |             |                        |                        |                                |                 |         |
| KANZ        | 09                   | 0912                       | E    | N26            | W18                     | 7971                         | 11 D                 | 1             |             |                        |                        |                                |                 |         |
| KANZ        | 09                   | 0930                       | 0935 | N24            | W18                     | 7971                         | 1-                   | 1 C           |             |                        |                        |                                |                 |         |
| —           | 09                   | 1333                       | 1443 | N25            | W22                     | 7971                         | 1-                   | 2 C           | 1406        | .58                    | .58                    |                                |                 | EH      |
| OTTA        | 09                   |                            |      |                |                         |                              |                      |               |             |                        |                        |                                |                 | DH      |
| —           | 09                   |                            |      |                |                         |                              |                      |               |             |                        |                        |                                |                 | FH      |
| —           | 09                   |                            |      |                |                         |                              |                      |               |             |                        |                        |                                |                 |         |
| SACP        | 09                   | 1404                       | E    | N26            | W22                     | 7971                         | 1-                   | 1 C           |             | .69                    | .69                    |                                | 18              | DH      |
| —           | 09                   | 1409                       | E    | N24            | W22                     | 7971                         | 7 D                  | 1+            |             |                        |                        |                                |                 |         |
| —           | 09                   |                            |      |                |                         |                              |                      |               |             |                        |                        |                                |                 |         |
| SACP        | 09                   | 1418                       | 1439 | N25            | W20                     | 7971                         | 1-                   | 1 C           |             | .60                    | .60                    |                                | 16              |         |
| OTTA        | 09                   | 1626                       | 1644 | N27            | W27                     | 7971                         | 1-                   | 1 C           | 1629        | .23                    | .23                    |                                |                 | E       |
| —           | 09                   | 1626                       | 1645 | N25            | W28                     | 7971                         | 1-                   | 1 C           |             | .43                    | .43                    |                                | 19              |         |
| SACP        | 09                   | 1627                       | 1642 | N24            | W27                     | 7971                         | 1-                   | 1 C           | 1632        | .40                    | .40                    |                                | 30              | HL      |
| —           | 09                   | 1627                       | 1642 | N25            | W28                     | 7971                         | 1-                   | 1 C           | 1631        | .29                    | .29                    |                                |                 |         |
| OTTA        | 09                   | 1628                       | 1655 | N25            | W28                     | 7971                         | 1-                   | 2 P           | 1817        | .40                    | .40                    |                                |                 |         |
| HALE        | 09                   | 1817                       | E    | N25            | W23                     | 7971                         | 1-                   | 2 C           | 1847        | .80                    | .80                    |                                | 18              | L       |
| —           | 09                   | 1838                       | 1921 | N25            | W24                     | 7971                         | 1-                   | 1 C           |             | 1.38                   | 1.43                   |                                | 18              |         |
| HALE        | 09                   | 1837                       | 1857 | N26            | W25                     | 7971                         | 1-                   | 1 C           |             | .25                    | .25                    |                                | 18              |         |
| SACP        | 09                   | 1934                       | 1945 | N27            | W22                     | 7971                         | 1-                   | 1 C           | 2026        | .10                    | .10                    |                                | 10              |         |
| —           | 09                   | 2021                       | 2032 | N17            | W05                     |                              | 1-                   | 1 C           | 2115        | .20                    | .20                    |                                | 20              |         |
| LOCK        | 09                   | 2021                       | 2032 | N17            | W05                     |                              | 1-                   | 1 C           |             | .86                    | .86                    |                                | 17              |         |
| —           | 09                   | 2109                       | 2121 | N36            | E78                     |                              | 1-                   | 2 C           |             | .90                    | .90                    |                                |                 |         |
| —           | 09                   | 2112                       | 2148 | N26            | W26                     | 7971                         | 1-                   | 2 C           |             | .20                    | .20                    |                                |                 |         |
| —           | 09                   | 2132                       | 2146 | N25            | W22                     | 7971                         | 1-                   | 2 P           | 2137        | .20                    | .20                    |                                |                 | D       |

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| OBSERVATORY | DATE<br>SEPT<br>1965 | OBSERVED<br>UNIVERSAL TIME |          | LOCATION       |              |                         | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS |                         |                         |                                | REMARKS |                  |
|-------------|----------------------|----------------------------|----------|----------------|--------------|-------------------------|-------------------------------|----------------------|---------------|--------------|-------------------------|-------------------------|--------------------------------|---------|------------------|
|             |                      | START                      | END      | APPROX<br>LAT. | MER<br>DIST. | MCMA<br>PLACE<br>REGION |                               |                      |               | TIME<br>U T  | MEAS<br>AREA<br>Sq Deg. | CORR<br>AREA<br>Sq Deg. | MAX<br>WIDTH<br>H <sub>g</sub> |         | MAX.<br>INT<br>% |
| LOCK        | 09                   | 2219                       | 2233     | N27 W27        | 7971         |                         |                               | 1-                   | C             |              | .17                     | .18                     |                                | 18      |                  |
|             | 09                   | 2322                       | 2346     | N25 W29        | 7971         |                         |                               | 1-                   | C             | 2330         | 1.21                    | 1.28                    |                                | 18      |                  |
|             | 09                   | 2324                       | 2341     | N25 W30        | 7971         |                         |                               | 1-                   | C             |              | .40                     | .40                     |                                | 20      | H                |
| SACP        | 10                   | 0000                       | E 0111 D | N26 W27        | 7971         |                         | 71 D                          | 1                    | C             | 0220         | 2.62                    | 2.75                    |                                | 17      |                  |
| MANI        | 10                   | 0215                       | 0231     | N25 W26        | 7971         |                         |                               | 1-                   | 2             |              | .20                     | .22                     |                                |         |                  |
| ISTA        | 10                   | 0810                       | E 0820   | N27 W30        | 7971         |                         |                               | 1-                   |               |              |                         |                         |                                |         |                  |
| KAND        | 10                   | 0825                       | 0850     | N26 W25        | 7971         |                         |                               | 1-                   |               |              |                         |                         |                                |         |                  |
| CAPS        | 10                   | 1058                       | 1114     | N25 W30        | 7971         |                         | 16                            | 1+                   | 3             | 1100         | 2.80                    | 3.30                    |                                | 320     | F                |
| SACP        | 10                   | 1342                       | 1409     | N26 W38        | 7971         |                         |                               | 1-                   | C             | 1353         | 1.21                    | 1.37                    |                                | 19      |                  |
| MCMA        | 10                   | 1352                       | 1354 D   | N25 W40        | 7971         |                         |                               | 1-                   | 1 P           | 1353         | .50                     | .70                     |                                |         | S                |
| LOCK        | 10                   | 2349                       | 2355     | N29 W33        | 7971         |                         |                               | 1-                   | C             | 2351         | .40                     | .40                     |                                | 10      |                  |
| HALE        | 11                   | 0028                       | E 0039 D | N23 W38        | 7971         |                         |                               | 1-                   | 1 P           | 0034         | .60                     | .70                     |                                |         |                  |
| SACP        | 11                   | 0031                       | 0040 D   | N25 W39        | 7971         |                         | 9 D                           | 1                    | C             |              | 2.17                    | 2.47                    |                                | 17      |                  |
| LOCK        | 11                   | 0045                       | 0103     | N40 E75        | 7983         |                         |                               | 1-                   | C             | 0055         | .20                     | .40                     |                                | 10      |                  |
| MCMA        | 11                   | 1451                       | E 1505 D | N26 W50        | 7971         |                         |                               | 1-                   | 1 C           | 1453         | .20                     | .30                     |                                |         | D                |
| SACP        | 12                   | 1937                       | 1948     | N21 E06        | 7981         |                         |                               | 1-                   | C             |              | .43                     | .42                     |                                | 19      |                  |
| HALE        | 13                   | 2220                       | 2245     | N25 W80        | 7971         |                         |                               | 1-                   | 1 P           | 2225         | .20                     |                         |                                |         |                  |
| SACP        | 14                   | 0020                       | 0031     | N28 W81        | 7971         |                         |                               | 1-                   | C             |              | .34                     |                         |                                | 17      |                  |
| HALE        | 14                   | 0201                       | 0208     | N28 W85        | 7971         |                         |                               | 1-                   | 1 C           | 0202         | .20                     |                         |                                |         | H                |
| KANZ        | 14                   | 0955                       | E 1002 D | N29 W88        | 7971         |                         | 7 D                           | 1                    | C             |              |                         |                         |                                |         | A                |
| SACP        | 14                   | 1408                       | 1432     | S22 E73        |              |                         |                               | 1-                   | C             |              | .25                     | .61                     |                                | 17      |                  |
| SACP        | 15                   | 1939                       | 1948     | N28 E80        | 7989         |                         |                               | 1-                   | C             |              | .19                     | .46                     |                                | 16      |                  |
| SACP        | 15                   | 2002                       | 2011     | N31 E77        | 7989         |                         |                               | 1-                   | C             |              | .18                     | .40                     |                                | 17      |                  |
| HALE        | 15                   | 2003                       | 2012     | N31 E80        | 7989         |                         |                               | 1-                   | 2 C           | 2008         | .20                     | .50                     |                                |         |                  |
| SACP        | 15                   | 2257                       | 2310 D   | N28 E78        | 7989         |                         |                               | 1-                   | C             |              | .19                     | .45                     |                                | 16      |                  |
| HALE        | 16                   | 0153                       | 0201     | N25 E23        | 7983         |                         |                               | 1-                   | 2 C           | 0155         | .10                     | .10                     |                                |         | H                |
| HALE        | 16                   | 0347                       | 0351     | N25 E23        | 7983         |                         |                               | 1-                   | 1 C           | 0349         | .10                     | .10                     |                                | 19      |                  |
| SACP        | 16                   | 2056                       | E 2127   | N24 E16        | 7983         |                         |                               | 1-                   | P             |              | .08                     | .08                     |                                |         |                  |
| MCMA        | 19                   | 1340                       | 1400 D   | N25 W62        | 7990         |                         |                               | 1-                   | 1 C           | 1345         | .50                     | 1.00                    |                                |         | S                |
| SACP        | 19                   | 2141                       | 2148     | N26 W24        | 7983         |                         |                               | 1-                   | C             |              | .94                     | .97                     |                                | 17      |                  |
| HALE        | 19                   | 2141                       | 2156     | N25 W24        | 7983         |                         |                               | 1-                   | 2 C           | 2143         | .40                     | .40                     |                                |         | F                |
| MCMA        | 19                   | 2144                       | E 2150 D | N26 W25        | 7983         |                         |                               | 1-                   | 2 P           | 2145         | .60                     | .70                     |                                |         | S                |
| KANZ        | 20                   | 1347                       | E        | N06 E75        | 7992         |                         |                               | 1-                   |               |              |                         |                         |                                |         |                  |
| MCMA        | 20                   | 2117                       | 2140     | N04 E72        | 7992         |                         |                               | 1-                   | 2 P           | 2120         | .20                     | .60                     |                                |         | D                |
| HALE        | 20                   | 2119                       | 2143     | N05 E70        | 7992         |                         |                               | 1-                   | 2 C           | 2121         | .20                     | .40                     |                                |         |                  |
| SACP        | 21                   | 0026                       | 0040     | N35 E56        | 7991         |                         |                               | 1-                   | C             |              | .35                     | .50                     |                                | 16      |                  |
| CAPS        | 21                   | 1207                       | E 1215   | N27 W42        | 7983         |                         | 8 D                           | 1                    | 1             | 1209         | 2.00                    | 2.80                    |                                | 160     | BFG              |
| MCMA        | 21                   | 1207                       | E 1248 D | N26 W43        | 7983         |                         | 41 D                          | 1+                   | 2 P           | 1208         | 2.00                    | 2.80                    |                                |         | BS               |
| KANZ        | 21                   | 1325                       | E 1410   | N26 W44        | 7983         |                         | 45 D                          | 1                    | 1             |              |                         |                         |                                |         | EGH              |
| MCMA        | 21                   | 1419                       | 1453     | N26 W43        | 7983         |                         |                               | 1-                   | 1 P           | 1421         | .80                     | 1.10                    |                                |         | S                |
| SACP        | 21                   | 1436                       | 1451     | N26 W44        | 7983         |                         |                               | 1-                   | C             |              | 1.20                    | 1.44                    |                                | 21      |                  |

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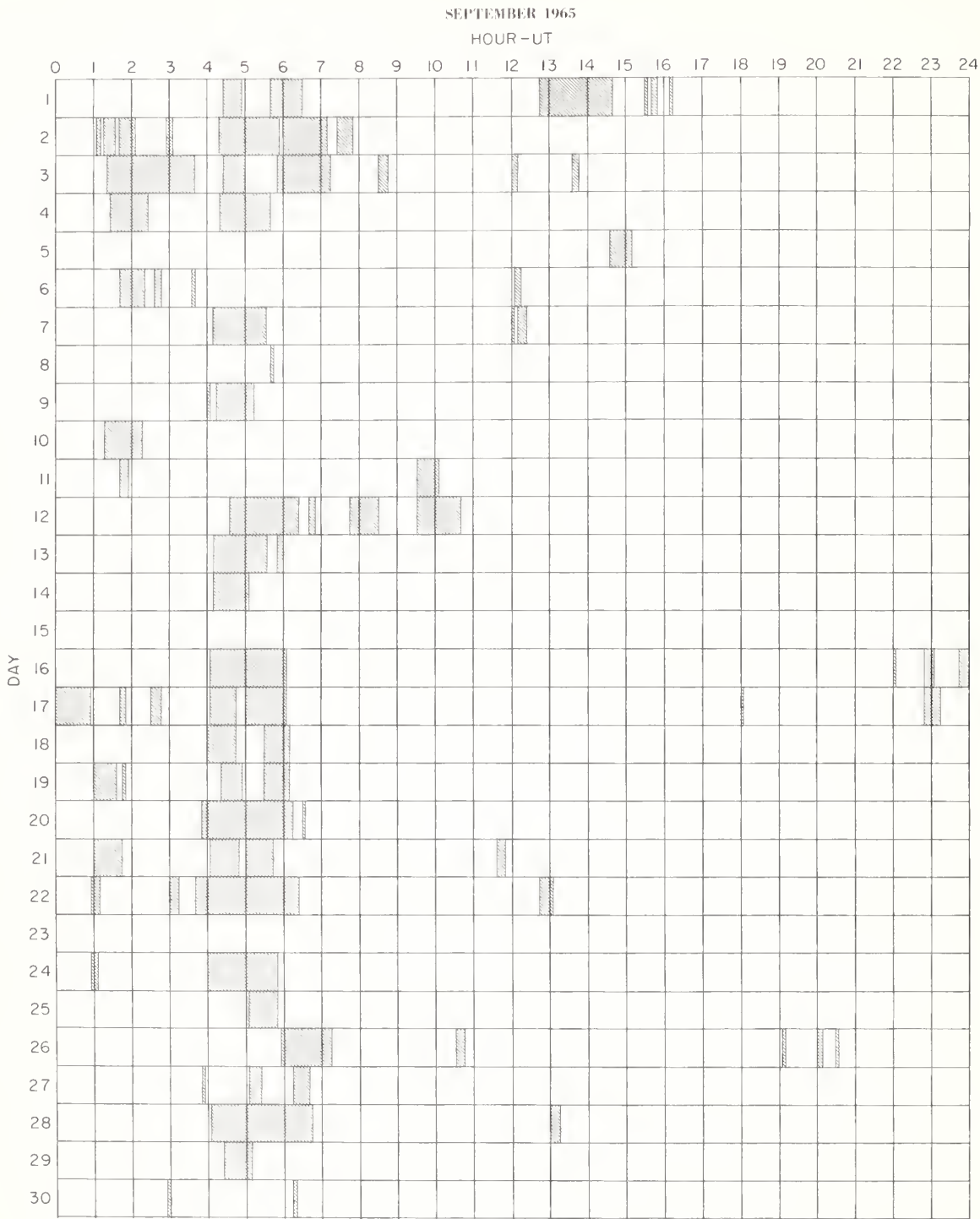
| OBSERVATORY | DATE<br>SEPT<br>1965 | OBSERVED<br>UNIVERSAL TIME |        | LOCATION       |             | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS<br>COND. | MEASUREMENTS            |                  |                        |                        | REMARKS |                    |                 |
|-------------|----------------------|----------------------------|--------|----------------|-------------|-------------------------------|----------------------|--------------|-------------------------|------------------|------------------------|------------------------|---------|--------------------|-----------------|
|             |                      | START                      | END    | APPROX.<br>LAT | MER<br>DIST |                               |                      |              | MATH<br>PLACE<br>REGION | TIME<br>—<br>U T | MEAS<br>AREA<br>Sq Deg | CORR<br>AREA<br>Sq Deg |         | MAX<br>WIDTH<br>Ha | MAX<br>INT<br>" |
|             |                      |                            |        |                |             |                               |                      |              |                         |                  |                        |                        |         |                    |                 |
| — KANZ      | 21                   | 1442 E                     | 1502 D | N26 W44        | 7983        | 20 D                          | 1                    |              |                         |                  |                        |                        |         | EGH                |                 |
| LOCK        | 22                   | 1937                       | 2007   | S30 W35        |             |                               | 1-                   | C            | 1947                    | .20              | .30                    |                        | 10      | L                  |                 |
| MANI        | 23                   | 0335                       | 0351   | N28 W15        | 7995        |                               | 1-                   |              |                         |                  |                        |                        |         |                    |                 |
| MANI        | 23                   | 0355                       | 0405   | N28 W15        | 7995        |                               | 1-                   | 2            | 0339                    | .40              | .40                    |                        |         |                    |                 |
| — WEND      | 23                   | 0540 E                     | 0637   | N27 W21        | 7995        | 57 D                          | 1-                   | 2            | 0356                    | .10              | .10                    |                        |         |                    |                 |
| — ISTA      | 23                   | 0610 E                     | 0635   | N28 W22        | 7995        | 25                            | 1+                   |              |                         |                  |                        |                        |         |                    |                 |
| MCMA        | 23                   | 1302 E                     | 1335   | N26 W28        | 7995        |                               | 1-                   | 2 P          | 1306                    | .80              | 1.00                   |                        |         | SL                 |                 |
| MCMA        | 23                   | 1540                       | 1620   | N26 W28        | 7995        |                               | 1-                   | 2 C          | 1350                    | .30              | .40                    |                        |         | DT                 |                 |
| — HUAN      | 23                   | 1550 E                     | 1602 D | N25 W21        | 7995        |                               | 1-                   | S            |                         |                  |                        |                        |         | DH                 |                 |
| — KANZ      | 23                   | 1553 E                     | 1602   | N25 W28        | 7995        | 9 D                           | 1-                   |              |                         |                  |                        |                        |         | EH                 |                 |
| MCMA        | 23                   | 1830                       | 1910   | N26 W28        | 7995        |                               | 1-                   | 2 C          | 1845                    | .50              | .70                    |                        | 10      | L                  |                 |
| LOCK        | 23                   | 2345                       | 2412   | N25 W29        | 7995        |                               | 1-                   | C            | 2354                    | .30              | .30                    |                        |         |                    |                 |
| MANI        | 24                   | 0344 E                     | 0358 D | N29 W28        | 7995        |                               | 1-                   | 2            | 0347                    | .20              | .22                    |                        |         |                    |                 |
| WEND        | 24                   | 0858 E                     | 0909 D | N27 W36        | 7995        |                               | 1-                   |              |                         |                  |                        |                        |         |                    |                 |
| WROC        | 24                   | 0900 E                     | 0915 D | N25 W38        | 7995        |                               | 1-                   | 2            |                         |                  |                        | 2.80                   |         | HJ                 |                 |
| KAND        | 24                   | 0900                       | 0926   | N24 W39        | 7995        | 26                            | 1                    |              |                         |                  |                        |                        |         |                    |                 |
| WEND        | 24                   | 0924 E                     | 0942 D | N27 W32        | 7995        | 18 D                          | 1                    |              |                         |                  |                        |                        |         |                    |                 |
| KAND        | 24                   | 0926                       | 0936   | N25 W36        | 7995        | 10                            | 1+                   | 2            |                         |                  |                        |                        |         | J                  |                 |
| WROC        | 24                   | 0927                       | 0937   | N25 W32        | 7995        |                               | 1+                   |              |                         |                  |                        | 3.10                   |         |                    |                 |
| KAND        | 24                   | 0937                       | 1002   | N24 W40        | 7995        | 25                            | 1+                   |              |                         |                  |                        |                        |         | EH                 |                 |
| KANZ        | 24                   | 0937 E                     | 1003 D | N24 W37        | 7995        | 26 D                          | 1                    |              |                         |                  |                        |                        |         | EH                 |                 |
| KANZ        | 24                   | 1040 E                     | 1110 D | N24 W38        | 7995        | 30 D                          | 1                    |              |                         |                  |                        | 4.00                   |         | HJ                 |                 |
| WROC        | 24                   | 1040 E                     | 1110   | N25 W38        | 7995        | 30 D                          | 1                    | 2            |                         |                  |                        | 1.60                   |         | D                  |                 |
| HUAN        | 24                   | 1443 E                     | 1451   | N28 W39        | 7995        |                               | 1-                   | S            |                         |                  |                        |                        |         |                    |                 |
| SACP        | 26                   | 1409                       | 1421   | N21 E85        | 8005        |                               | 1-                   | C            |                         | 1.03             |                        |                        | 25      |                    |                 |
| SACP        | 26                   | 1457                       | 1511   | N21 E84        | 8005        |                               | 1-                   | C            |                         | .47              |                        |                        | 22      |                    |                 |
| HUAN        | 26                   | 1637 E                     | 1649   | N19 E85        | 8005        |                               | 1-                   | S            |                         |                  |                        | 1.40                   |         |                    |                 |
| HUAN        | 26                   | 1654                       | 1658   | N19 E85        | 8005        |                               | 1-                   | V            |                         |                  |                        |                        |         | D                  |                 |
| — SACP      | 26                   | 1655                       | 1701   | N21 E82        | 8005        |                               | 1-                   |              |                         | .09              |                        |                        | 18      |                    |                 |
| HALE        | 26                   | 1713                       | 1725   | N19 E87        | 8005        |                               | 1-                   | 2 C          | 1716                    | .20              |                        |                        |         |                    |                 |
| — SACP      | 26                   | 1714                       | 1719 D | N20 E82        | 8005        |                               | 1-                   | C            |                         | .28              |                        |                        | 19      |                    |                 |
| HALE        | 26                   | 1841                       | 1847 D | N19 E87        | 8005        |                               | 1-                   | 1 P          | 1842                    | .10              |                        |                        |         |                    |                 |
| LOCK        | 26                   | 2106                       | 2115   | N20 E85        | 8005        |                               | 1-                   | 1 C          | 2110                    | .20              | .60                    |                        | 20      |                    |                 |
| HALE        | 26                   | 2143                       | 2151 D | N33 W53        | 7989        |                               | 1-                   | 2 P          | 2147                    | .70              | 1.00                   |                        |         | F                  |                 |
| — LOCK      | 27                   | 0005                       | 0021   | N17 E85        | 8005        |                               | 1-                   | C            | 0012                    | .20              | .60                    |                        | 20      |                    |                 |
| HALE        | 27                   | 0009                       | 0018   | N20 E87        | 8005        |                               | 1-                   | 1 C          | 0012                    | .30              |                        |                        |         |                    |                 |
| HALE        | 27                   | 0053                       | 0059   | N20 E87        | 8005        |                               | 1-                   | 1 C          | 0055                    | .30              |                        |                        |         |                    |                 |
| SACP        | 28                   | 1358                       | 1414   | N23 E58        | 8005        |                               | 1-                   | C            |                         | .25              | .36                    |                        | 17      | E                  |                 |
| MCMA        | 28                   | 1858 E                     | 1906 D | N21 E57        | 8005        |                               | 1-                   | 1 P          | 1906                    | .40              | .80                    |                        |         | EH                 |                 |
| MCMA        | 28                   | 2016 E                     | 2030 D | N21 E57        | 8005        |                               | 1-                   | 1 P          | 2019                    | .40              | .80                    |                        |         | E                  |                 |
| MCMA        | 28                   | 2058                       | 2114 D | N21 E58        | 8005        |                               | 1-                   | 1 P          | 2105                    | .30              | .60                    |                        |         |                    |                 |
| HALE        | 29                   | 0210                       | 0236   | N21 E53        | 8005        |                               | 1-                   | 1 C          | 0213                    | .70              | .90                    |                        |         |                    |                 |
| HALE        | 29                   | 0331                       | 0403 D | N21 E53        | 8005        |                               | 1-                   | 1 P          | 0334                    | .80              | 1.00                   |                        |         |                    |                 |
| — MANI      | 29                   | 0344                       | 0354   | N19 E49        | 8005        |                               | 1-                   | 2            | 0347                    | .30              | .33                    |                        |         |                    |                 |

# SOLAR FLARES

SEPTEMBER 1965

| OBSERVATORY | DATE | OBSERVED<br>UNIVERSAL TIME |     |              | LOCATION       |              |                          | DURA-<br>TION<br>—<br>MINUTES | IM-<br>POR-<br>TANCE | OBS.<br>COND. | MEASUREMENTS |                        |                         |                                | REMARKS |                              |     |     |
|-------------|------|----------------------------|-----|--------------|----------------|--------------|--------------------------|-------------------------------|----------------------|---------------|--------------|------------------------|-------------------------|--------------------------------|---------|------------------------------|-----|-----|
|             |      | START                      | END | MAX<br>PHASE | APPROX<br>LAT. | MER<br>DIST. | MONTH<br>PLACE<br>REGION |                               |                      |               | TIME<br>UT   | MEAS<br>AREA<br>Sq Deg | COOR.<br>AREA<br>Sq Deg | MAX<br>WIDTH<br>H <sub>g</sub> |         | MAX<br>INT<br>H <sub>g</sub> |     |     |
| WEND        | 29   | 1250                       | E   | 1256         | D              |              | S29                      | E46                           | 8004                 | 1-            |              |                        |                         |                                |         |                              |     |     |
|             | 29   | 1325                       | E   | 1331         | D              |              | N17                      | E50                           | 8005                 | 1-            |              |                        |                         |                                |         |                              |     |     |
|             | 29   | 1500                       |     | 1545         |                | 1517         | N22                      | E47                           | 8005                 | 1-            |              |                        | 1.20                    | 1.80                           |         |                              | E   |     |
|             | 29   | 1507                       |     | 1541         |                | 1516         | N20                      | E46                           | 8005                 | 1-            |              |                        | 1.53                    | 1.83                           |         |                              |     |     |
|             | 29   | 1922                       |     | 1929         |                | 1923         | N20                      | E43                           | 8005                 | 1-            |              |                        | 1.11                    | 1.30                           |         |                              |     |     |
|             | 29   | 1923                       |     | 1935         |                | 1924         | N20                      | E43                           | 8005                 | 1-            |              |                        | 1.20                    | 1.40                           |         |                              |     |     |
|             | 29   | 2309                       | E   | 2343         |                | 2318         | N18                      | E36                           | 8005                 | 1-            |              |                        | .22                     | .22                            |         |                              |     |     |
|             | 29   | 2316                       |     | 2344         |                | 2327         | N20                      | E39                           | 8005                 | 1-            |              |                        | .50                     | .50                            |         |                              |     |     |
|             | 29   | 2316                       |     | 2347         |                | 2325         | N21                      | E39                           | 8005                 | 1-            |              |                        | 1.60                    | 1.80                           |         |                              | EJ  |     |
|             | 29   | 2317                       |     | 2340         |                | 2324         | N22                      | E39                           | 8005                 | 1-            |              |                        | 1.20                    | 1.35                           |         |                              | F   |     |
| SACP        | 29   | 2346                       |     | 2351         | D              | 2350         | N20                      | E39                           | 8005                 | 1-            |              |                        | .52                     | .58                            |         |                              |     |     |
|             | 29   | 2350                       |     | 0016         | D              |              | N19                      | E39                           | 8005                 | 1             | P            |                        | .60                     | .70                            |         |                              |     |     |
|             | 29   | 2350                       |     | 0013         |                | 2357         | N18                      | E35                           | 8005                 | 1-            | 2            |                        | .20                     | .22                            |         |                              |     |     |
| SACP        | 30   | 0000                       |     | 0040         | D              | 0010         | N21                      | E40                           | 8005                 | 1-            |              |                        | 1.03                    | 1.16                           |         |                              | 17  |     |
|             | 30   | 0025                       |     | 0102         |                | 0031         | N18                      | E35                           | 8005                 | 1-            |              |                        | .40                     | .44                            |         |                              |     |     |
|             | 30   | 0033                       | E   | 0048         | D              | 0038         | N21                      | E40                           | 8005                 | 1-            | 2            |                        | 1.20                    | 1.30                           |         |                              | F   |     |
|             | 30   | 0341                       |     | 0402         | D              | 0353         | N20                      | E33                           | 8005                 | 1-            | 1            | P                      | .50                     | .50                            |         |                              |     |     |
|             | 30   | 0342                       |     | 0349         | D              | 0348         | N20                      | E37                           | 8005                 | 1-            | 2            |                        | .50                     | .56                            |         |                              |     |     |
|             | 30   | 0525                       |     | 0613         | D              | 0540         | N19                      | E36                           | 8005                 | 1-            | 2            |                        | 1.10                    | 1.20                           |         |                              |     |     |
|             | 30   | 1010                       |     | 1100         | D              |              | N20                      | E38                           | 8005                 | 1-            | 1            |                        |                         |                                |         |                              | J   |     |
|             | 30   | 1020                       |     | 1050         |                |              | N20                      | E32                           | 8005                 | 1-            | 1            |                        |                         |                                |         |                              | J   |     |
|             | 30   | 1240                       |     | 1252         |                |              | N21                      | E38                           | 8005                 | 1-            | 3            |                        | .20                     | .30                            |         |                              | D   |     |
|             | 30   | 1313                       | E   | 1504         |                | 1351         | N21                      | E32                           | 8005                 | 1-            | 2            |                        | 5.26                    | 5.60                           |         |                              | 25  |     |
| OTTA        | 30   | 1319                       |     | 1359         |                |              | N21                      | E33                           | 8005                 | 1             |              |                        | 2.33                    | 2.52                           |         |                              | F   |     |
|             | 30   | 1320                       | E   | 1420         |                |              | N20                      | E32                           | 8005                 | 2             |              | 1                      |                         |                                |         |                              | F   |     |
|             | 30   | 1330                       |     | 1353         |                |              | N22                      | E38                           | 8005                 | 23            |              | 3                      |                         | 1340                           |         |                              | FK  |     |
|             | 30   | 1353                       | E   | 1403         | D              |              | N22                      | E36                           | 8005                 | 10            |              | 1                      |                         | 1359                           |         |                              | BF  |     |
|             | 30   | 1425                       | E   | 1440         | D              |              | N21                      | E34                           | 8005                 | 15            |              | 1                      |                         | 2.60                           | 2.60    |                              |     |     |
|             | 30   | 1446                       |     | 1452         |                | 1447         | N22                      | E36                           | 8005                 | 1-            |              | 2                      |                         | .70                            | .75     |                              | F   |     |
|             | 30   | 1446                       |     | 1504         |                |              | N22                      | E38                           | 8005                 | 1-            |              | 3                      |                         | 1.00                           | 1.30    |                              | F   |     |
|             | 30   | 1513                       |     | 1653         |                | 1547         | N20                      | E30                           | 8005                 | 100           |              | 2                      |                         | 5.11                           | 5.38    |                              |     |     |
|             | 30   | 1520                       | E   | 1545         | D              |              | N20                      | E29                           | 8005                 | 25            |              | 1                      |                         |                                |         |                              | E   |     |
|             | 30   | 1525                       |     | 1610         |                |              | N19                      | E34                           | 8005                 | 45            |              | 1                      |                         | 2.50                           | 3.10    |                              | 180 | FK  |
| LOCK        | 30   | 1525                       | U   | 1705         |                | 1553         | N19                      | E27                           | 8005                 | 1-            |              | 3                      |                         | 1.00                           | 1.00    |                              | 20  | I   |
|             | 30   | 1845                       | E   | 1615         | D              |              | N21                      | E29                           | 8005                 | 30            |              | 2                      |                         |                                |         |                              |     |     |
|             | 30   | 1920                       |     | 2018         |                | 1937         | N19                      | E29                           | 8005                 | 58            |              | 1                      |                         | 2.10                           | 2.10    |                              | 30  |     |
|             | 30   | 1921                       |     | 2203         |                | 1939         | N21                      | E30                           | 8005                 | 162           |              | 2                      |                         | 5.80                           | 6.09    |                              | 25  |     |
|             | 30   | 1924                       |     | 2007         |                | 1936         | N21                      | E31                           | 8005                 | 43            |              | 1+                     |                         | 3.20                           | 3.47    |                              |     | EFI |
|             | 30   | 1927                       | E   | 2023         |                | 1940         | N20                      | E29                           | 8005                 | 56            |              | 2                      |                         | 3.20                           | 3.20    |                              |     |     |
|             | 30   | 2256                       |     | 2330         |                | 2304         | N20                      | E28                           | 8005                 | 162           |              | 2                      |                         | 1.19                           | 1.24    |                              | 21  |     |
|             | 30   | 2257                       |     | 2311         |                | 2307         | N18                      | E26                           | 8005                 | 1-            |              | 2                      |                         | .50                            | .50     |                              |     |     |
|             | 30   | 2257                       |     | 2328         |                | 2305         | N19                      | E27                           | 8005                 | 1-            |              | 1                      |                         | .70                            | .70     |                              | 20  | F   |
|             | 30   | 2301                       | E   | 2327         |                |              | N20                      | E28                           | 8005                 | 1-            | 1            | P                      |                         | .80                            | .80     |                              |     |     |

INTERVALS OF NO FLARE PATROL OBSERVATIONS  
PROVISIONAL



Observatories included:

|                  |          |                |        |                 |             |
|------------------|----------|----------------|--------|-----------------|-------------|
| Capri-S (Sweden) | Huancayo | Kanzelhöhe     | Meudon | Sacramento Peak | Wendelstein |
| Catania          | Istanbul | Lockheed       | Manila | Salonique       | Wroclaw     |
| Haleakala        | Kandilli | McMath-Hulbert | Ottawa | Tortosa         |             |



# IONOSPHERIC EFFECTS OF SOLAR FLARES

111g

SHORT WAVE RADIO FADEOUTS  
SUDDEN COSMIC NOISE ABSORPTION  
SUDDEN ENHANCEMENTS OF ATMOSPHERICS  
SOLAR NOISE BURSTS AT 18 Mc/s

SUDDEN PHASE ANOMALIES  
SUDDEN ENHANCEMENTS OF SIGNAL  
SUDDEN FREQUENCY DEVIATIONS

AUGUST 1965

| AUG.<br>1965 | UNIVERSAL TIME |      |      | TYPE<br>SWF<br>IMP | IMPORTANCE |      |     |     |     |     | BUR | WIDE<br>SPREAD<br>INDEX | STATIONS   | KNOWN<br>FLARE |
|--------------|----------------|------|------|--------------------|------------|------|-----|-----|-----|-----|-----|-------------------------|--|----------------|
|              | START          | END  | MAX  |                    | ABS        | SCNA | SEA | SPA | SES | SFD |     |                         |  |                |
| 01           | 1605           | 1610 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC  |                |
| 01           | 1613           | 1617 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC  |                |
| 02           | 1408           | 1411 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO  |                |
| 03           | 1626           | 1628 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO  |                |
| 03           | 2021           | 2023 |      |                    |            |      |     |     |     |     | 1   | 5                       | BO MC HA   | 1930           |
| 03           | 2021           | 2034 | 2023 |                    |            |      |     |     |     | 004 | 1   | 5                       | BO (WWV10-0.4,<br>WWV 15-0.1)                    | 1930           |
| 03           | 2023           | 2025 |      |                    |            |      |     |     |     |     | 1   | 5                       | BO MC HA   | 1930           |
| 04           | 1534           | 1536 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO  |                |
| 04           | 2103           | 2105 |      |                    |            |      |     |     |     |     | 1   | 5                       | BO MC HA   | 2102           |
| 08           | 1529           | 1625 | 1530 |                    |            |      | 1   |     |     |     |     | 1                       | AR   |                |
| 09           | 1416           | 1448 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC (SERIES OF BURSTS)                         |                |
| 09           | 1509           | 1513 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC  |                |
| 09           | 1514           | 1517 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC  |                |
| 09           | 1525           | 1532 |      |                    |            |      |     |     |     |     | 1   | 4                       | BO MC  |                |
| 10           | 1430           | 1540 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO (NOISE STORM)                              |                |
| 14           | 0346           | 0348 |      |                    |            |      |     |     |     |     | 1   | 1                       | MA   | *              |
| 14           | 1735           | 1737 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO  |                |
| 15           | 0824           | 0832 |      |                    |            |      |     |     |     |     | 1   | 1                       | RO   |                |
| 18           | 1415           | 1602 |      |                    |            |      |     |     |     |     | 1   | 5                       | MC BO RO (NOISE STORM)                           |                |
| 25           | 1501           | 1526 |      |                    |            |      |     |     |     |     | 1   | 4                       | MC BO (SERIES OF BURSTS)                         |                |
| 31           | 2313           | 2320 | 2314 |                    |            |      |     |     |     | 008 |     | 2                       | BO (KKE5-0.8, KKE4-0.7,<br>WWV10-0.4, WWV15-0.3) | 2310           |

AR = Arcetri, Italy

RIOMETER EVENTS

AUGUST 1965

GREAT WHALE RIVER

30 Mc/s

| AUG.<br>1965 | START<br>UT | END<br>UT | MAX<br>UT | MAX.<br>ABSORP.<br>db,<br>(tenths) | NO.<br>OF<br>PEAKS | AUG.<br>1965 | START<br>UT | END<br>UT | MAX.<br>UT | MAX.<br>ABSORP.<br>db,<br>(tenths) | NO.<br>OF<br>PEAKS |
|--------------|-------------|-----------|-----------|------------------------------------|--------------------|--------------|-------------|-----------|------------|------------------------------------|--------------------|
| 1            | 2240        | 2326      | 2252      | 25                                 | 1                  | 16           | 2204        | -         | -          | } 22                               | 6                  |
| 2            | 0622        | 2144      | 1138      | 12                                 | 6                  | 17           | -           | -         | 1136       |                                    |                    |
| 3            | <0410*      | 2238      | 1249      | 14                                 | 1                  | 18           | -           | 0043      | -          |                                    |                    |
| 4            | 0110        | 1125      | 0715      | 9                                  | 1                  | 18           | 0450        | 2330      | 1446       | 7                                  | 6                  |
| 4            | 1626        | 2310      | 1905      | 13                                 | 2                  | 19           | 0240        | 1110      | 0608       | 71                                 | 6                  |
| 5            | 0302        | 0400      | 0313      | 6                                  | 1                  | 19           | 1428        | -         | -          | } 42                               | 26                 |
| 5            | 1032        | 1620      | 1254      | 4                                  | 1                  | 21           | -           | -         | 0348       |                                    |                    |
| 5            | 2210        | 2344      | 2227      | 5                                  | 1                  | 22           | -           | 0040      | -          |                                    |                    |
| 6            | 0332        | 0916      | 0706      | 6                                  | 2                  | 22           | 1156        | -         | 1300       | } 10                               | 1                  |
| 7            | 0228        | 0924      | 0232      | 5                                  | 2                  | 23           | -           | 0130      | -          |                                    |                    |
| 7            | 1826        | -         | -         | } 14                               | 4                  | 23           | 1900        | -         | 2058       | } 33                               | 14                 |
| 8            | -           | 0644      | 0330      |                                    |                    | 24           | -           | 1114      | -          |                                    |                    |
| 8            | 2104        | -         | 2328      | } 8                                | 2                  | 24           | 2028        | -         | -          | } 32                               | 10                 |
| 9            | -           | 0033      | -         |                                    |                    | 25           | -           | 1048      | 0453       |                                    |                    |
| 9            | 1454        | 2240      | 1817      | 12                                 | 1                  | 25           | 1526        | -         | -          | } 32                               | 12                 |
|              |             |           |           |                                    |                    | 26           | -           | 2048      | 0347       |                                    |                    |
| 10           | 0432        | 1623      | 1448      | 7                                  | 3                  |              |             |           |            |                                    |                    |
| 11           | 0034        | 1020      | 0211      | 40                                 | 6                  | 27           | 0047        | 0120      | 0056       | 3                                  | 1                  |
| 12           | 0118        | 1024      | 0646      | 14                                 | 2                  | 27           | 0348        | 1740      | 1127       | 13                                 | 4                  |
| 12           | 2304        | -         | -         | } 11                               | 1                  | 27           | 2156        | -         | 2208       | } 7                                | 1                  |
| 13           | -           | 0140      | 0027      |                                    |                    | 28           | -           | 1157      | -          |                                    |                    |
|              |             |           |           |                                    |                    | 29           | 0252        | 1344      | 0620       | 9                                  | 4                  |
| 13           | 0906        | 1500      | 1114      | 12                                 | 1                  |              |             |           |            |                                    |                    |
| 14           | 0056        | 2206      | 0336      | 18                                 | 7                  | 29           | 2043        | -         | 2105       | } 18                               | 6                  |
| 15           | 0556        | 1234      | 1111      | 8                                  | 1                  | 30           | -           | 1340      | -          |                                    |                    |
| 15           | 2018        | -         | 2054      | } 8                                | 2                  | 30           | 2000        | -         | -          | } 43                               | 5                  |
| 16           | -           | 0234      | -         |                                    |                    | 31           | -           | 2056      | 0423       |                                    |                    |

\* Equipment Failure - Event was in progress when trace was resumed at 0410.

# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVa

SEPTEMBER 1965

ARO-OTTAWA  
DRAO-PENTICTON

2800 Mc/s  
2700 Mc/s

| SEP.<br>1965 | U<br>R<br>A<br>N<br>E | DESCRIPTIVE<br><br>TYPE | START<br><br>UT | DURATION<br><br>HRS MIN | MEAN<br><br>FLUX | MAXIMUM |      | REMARKS |
|--------------|-----------------------|-------------------------|-----------------|-------------------------|------------------|---------|------|---------|
|              |                       |                         |                 |                         |                  | TIME    | FLUX |         |
| 5            | 3                     | Simple 3                | 1208            | 1 23                    | 1.8              | Indet.  | 2.4  |         |
| 6            | 5                     | Absorption              | 1905            | 0 23                    | 0.6              | 1915    | 1.2  |         |
| 7            | 3                     | Simple 3                | 1540            | 0 27                    | 0.6              | 1554    | 1.2  |         |
| 7            | 3                     | Simple 3                | 1820            | 2 10                    | 0.8              | 1910    | 1.6  |         |
| 8            | 3                     | Simple 3                | 2035            | 1 35                    | 1.5              | 2105    | 3.0  |         |
| 9            | 3                     | Simple 3                | 1425            | 0 25                    | 0.3              | Indet.  | 0.6  |         |
| 9            | 3                     | Simple 3                | 1835            | 0 50                    | 0.6              | 1843    | 1.2  |         |
| 9            | 3                     | Simple 3                | 2353            | 0 42                    | 0.8              | Indet.  | 1.2  |         |
| 26           | 1                     | Simple 1                | 1714            | 0 02                    | 1.2              | 1715    | 2.4  |         |
|              | 4                     | Post B.I.               | 1716            | 1 00                    | 0.5              | --      | 1.0  |         |
| 26           | 3                     | Simple 3                | 1900            | 2 00                    | 0.4              | 2012    | 0.8  |         |
| 29           | 3                     | Simple 3A               | 1508            | 0 47                    | 1.0              | 1521    | 2.0  |         |
|              | 1                     | Simple 1                | 1513.5          | 0 03                    | 1.5              | 1515    | 3.0  |         |
| 29           | 3                     | Simple 3                | 2120            | 0 40                    | 1.0              | 2150    | 2.0  |         |
| 30           | 3                     | Simple 3A               | 1210            | 5 20                    | 4.0              | 1352    | 8.0  |         |
|              | 3                     | Simple 3                | 1520            | 2 10                    | 5.0              | 1602    | 9.0  |         |
| 30           | 9                     | Precursor               | 1830            | 0 55                    | 1.3              |         | 2.6  |         |
|              | 3                     | Simple 3                | 1925            | 4 35                    | 6.0              | 1942    | 12.0 |         |

## HOURS OF OBSERVATION, JULY, AUGUST, SEPTEMBER 1965

### OBSERVING PERIOD:

July            1055 - 0140 UT  
August        1100 - 0140 UT  
September    1130 - 0130 UT

### With the following exceptions:

- (1) Observations commenced: July      18 at 1210 UT  
   22 at 1210  
   23 at 1210  
   24 at 1210  
   25 at 1230
- August        3 at 1210  
   10 at 1210  
   14 at 1240  
   21 at 1220  
   25 at 1220
- September    6 at 1235  
   9 at 1330  
   12 at 1225  
   13 at 1250  
   16 at 1210  
   19 at 1210  
   20 at 1210

- (2) Interruption of observations, approximately 20 minutes in duration, for calibration purposes in the period 1400 to 1500 UT, September 1 to 31.

SOLAR RADIO EMISSION  
INTERFEROMETRIC OBSERVATIONS

SEPTEMBER 1965

BOEING - SEATTLE

223 Mc/s

| SEPT.<br>1965 | Type of<br>Event | Start<br>UT | End<br>UT | Max<br>UT | Flux Density at<br>Time of Maximum<br>$10^{-22} W_{m-2} (cps)^{-1}$ |
|---------------|------------------|-------------|-----------|-----------|---|
| 2             | Noise storm      | 2155*       |           |           |   |
| 3             |                  | 1630*       | 1815      |           |   |
| 3             | Noise storm      | 2235        | 0030*     |           |   |
| 5             | Noise storm      | 1630*       | 1715      |           |   |
| 6             | Noise storm      | 0000        | 0030*     |           |   |
| 7             | Noise storm      | 2200        |           |           |   |
| 8             |                  |             |           | 2110      |   |
| [ 8           | High continuum   | 2111        |           |           |   |
| 9             |                  |             | 1950      |           |   |
| 9             | Noise storm      | 1951        | 0030*     |           |   |
| 10            | Noise storm      | 1630*       | 0030*     |           |   |
| 11            | Noise storm      | 1630*       | 1830      |           |   |
| 11            | Series of bursts | 2010        | 2150      | 2114.5    | 110   |
| 13            | Minor burst      | 2336.8      | 2338.4    | 2337.5    | 15  |

\* Noise storm in progress

The equipment was down from September 15, 1940 UT to September 16, 1730 UT and on September 29, 1910 UT - 1915 UT.

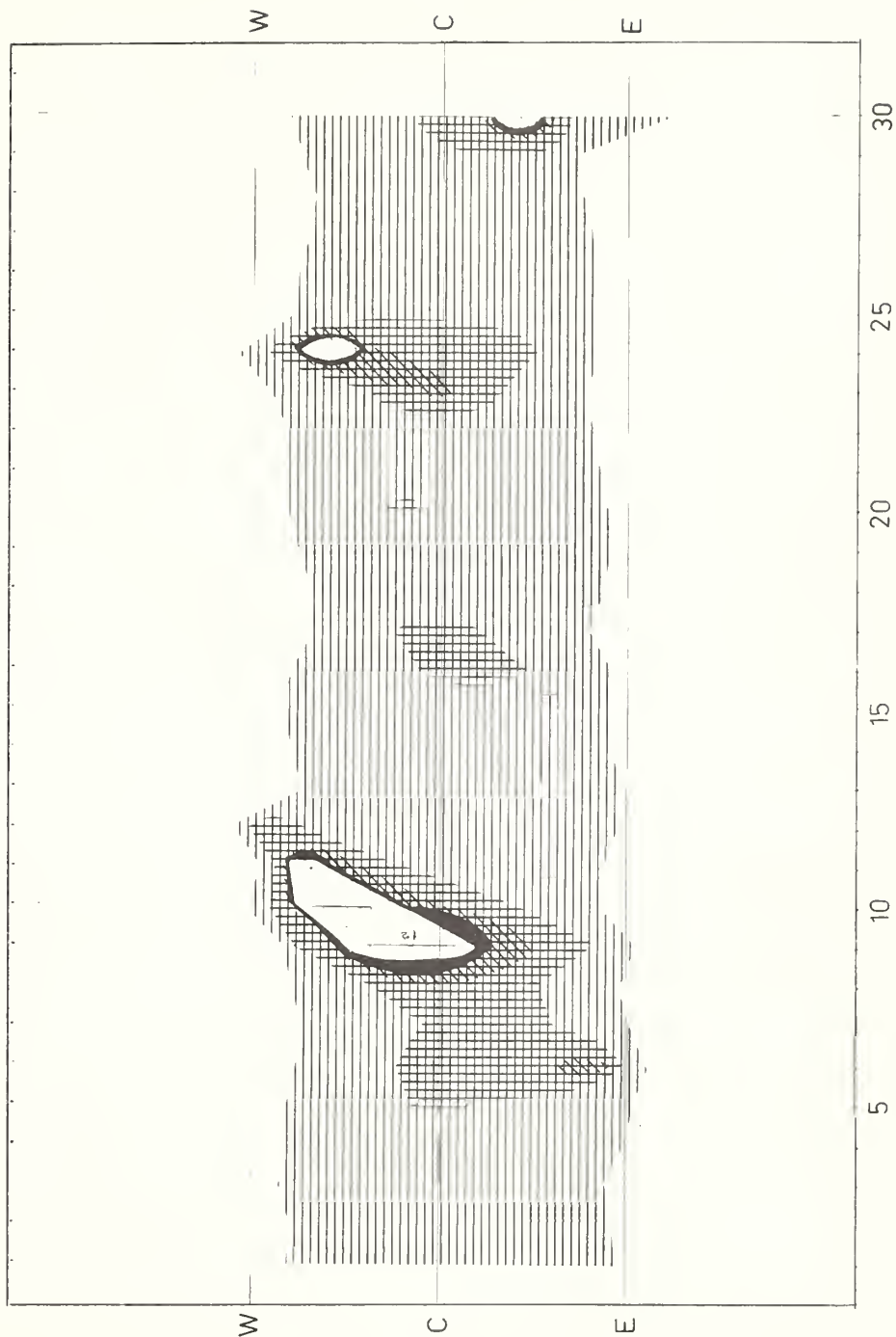
Normal observing hours were from 1630 UT to 0030 UT.

# SOLAR RADIO EMISSION INTERFEROMETRIC OBSERVATIONS

SEPTEMBER 1965

NANÇAY

169 Mc/s



SEPTEMBER 1965

SOLAR RADIO EMISSION  
OUTSTANDING OCCURRENCES

SEPTEMBER 1965

NBS BOULDER

108 Mc s

| SEPT.<br>1965 | TYPE | START<br>UT | TIME OF<br>MAXIMUM<br>UT | DURATION<br>MINUTES | INTENSITY |
|---------------|------|-------------|--------------------------|---------------------|-----------|
| 6             | 3    | 2057.8      | 2057.9                   | 1.6                 | 3         |
| 8             | 6    | 1410        | 2150                     | 655D                | 1         |
| 9             | 6    | 1240E       | 1813                     | 744D                | 1         |
| 10            | 6    | 1241E       | 1350                     | 134D                | 1         |
| 11            | 6    | 1315        | 1453                     | 274                 | 2         |

NOMINAL TIMES OF OBSERVATION

SEPTEMBER 1965

NBS BOULDER

108 Mc s

| SEPT.<br>1965 | HOURS OF<br>OBSERVATION<br>U.T. | HOURS OF<br>INTERFERENCE<br>U.T. | SEPT.<br>1965 | HOURS OF<br>OBSERVATION<br>U.T. | HOURS OF<br>INTERFERENCE<br>U.T. |
|---------------|---------------------------------|----------------------------------|---------------|---------------------------------|----------------------------------|
| 1             | 1232-0116                       |                                  | 13            | 1244-0058                       |                                  |
| 2             | 1233-0114                       |                                  | 14            | 1245-0056                       |                                  |
| 3             | 1234-0112                       | 1820-1847;<br>1923-2015          | 15            | 1246-0054                       |                                  |
|               |                                 |                                  | 16            | 1247-0053                       |                                  |
|               |                                 |                                  | 17            | 1247-0051                       |                                  |
| 4             | 1235-0110                       | 1854-2135;<br>2340-0036          | 18            | 1248-0049                       |                                  |
|               |                                 |                                  | 19            | 1249-0048                       |                                  |
| 5             | 1236-0110                       | 2145-2320                        | 20            | 1250-0046                       |                                  |
| 6             | 1237-0108                       |                                  | 21            | 1251-0044                       |                                  |
| 7             | 1238-0106                       | 2053-2121;<br>2210-0054          | 22            | 1252-0043                       |                                  |
| 8             | 1239-0105                       |                                  | 23            | 1253-1710                       |                                  |
|               |                                 |                                  | 24            | 2143-0039                       |                                  |
| 9             | 1240-1455;<br>1615-0104         |                                  | 25            | 1255-0038                       | 2315-0038                        |
| 10            | 1241-1815;<br>2315-0103         |                                  | 26            | 1256-0036                       |                                  |
|               |                                 |                                  | 27            | 1257-0034                       |                                  |
| 11            | 1242-0101                       | 2253-2313;<br>0002-0101          | 28            | 1258-0033                       | 1850-0033                        |
|               |                                 |                                  | 29            | 1259-0031                       |                                  |
|               |                                 |                                  | 30            | 1300-0030                       |                                  |
| 12            | 1243-0059                       |                                  |               |                                 |                                  |

Most of the interference was due to atmospherics.

# SOLAR RADIO EMISSION OUTSTANDING OCCURRENCES

IVc

SEPTEMBER 1965

HALEAKALA

107 Mc/s

| SEPT.<br>1965 | TYPE | START<br>UT | TIME OF<br>MAXIMUM<br>UT | DURATION<br>MINUTES | INTENSITY |
|---------------|------|-------------|--------------------------|---------------------|-----------|
| 4             | 6    | 0230        | 0240                     | 118D                | 1         |
| 6             | 3    | 2058        | 2058.5                   | 2.0                 | 2         |
| 8             | 6    | 1610E       | 2155                     | 745D                | 1         |
| 9             | 6    | 1611E       | 1813                     | 743D                | 1         |
| 11            | 6    | 1611E       | 1713                     | 96D                 | 2         |
| 12            | 6    | 0027        | 0145                     | 241D                | 2         |

Normal observing hours are from sunrise to sunset which for September is on the average from 1612UT to 0428UT.

No observations were made on September 13, 1730 - 1940 UT  
30, 1715 - 1930 UT

# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

SEPTEMBER 1965

High Altitude Observatory  
Boulder

7.6-41 Mc/s

| Date<br>Sep<br>1965 | Bursts     |                 |                | Frequency<br>Range (Mc/s) | Date<br>Sep<br>1965 | Bursts     |                 |                | Frequency<br>Range (Mc/s) |
|---------------------|------------|-----------------|----------------|---------------------------|---------------------|------------|-----------------|----------------|---------------------------|
|                     | Type       | Time (U.T.)     | Inten-<br>sity |                           |                     | Type       | Time (U T )     | Inten-<br>sity |                           |
| 2 Sep<br>6          | no observ. | 1400-1457       |                |                           | 9 Sep               | III        | 0027-0027:15    | 1              | 27-38                     |
|                     | III        | 1542:30-1543:15 | 1              | 21-41                     |                     | III        | 1418:30-1418:45 | 1-             | 21-38                     |
|                     | III        | 1752:15-1752:30 | 2              | 11-41                     |                     | III        | 1427:15-1427:30 | 1-             | 25-36                     |
|                     | III        | 1752:45-1753    | 2              | 8-41                      |                     | III        | 1428-1428:15    | 1              | 21-40                     |
|                     | III        | 1850:45-1851    | 1-             | 23-41                     |                     | III        | 1431:45-1432    | 1-             | 23-36                     |
|                     | III        | 1935-1935:45    | 1              | 21-41                     |                     | III        | 1432:45-1433    | 1-             | 27-35                     |
|                     | III        | 1936:15-1937    | 2              | 8-41                      |                     | III        | 1438-1438:30    | 1              | 23-39                     |
|                     | III        | 1938-1938:30    | 2              | 8-41                      |                     | III        | 1439:45-1440    | 1-             | 28-41                     |
|                     | III        | 1939:15-1940    | 2              | 8-41                      |                     | III        | 1443:30-1443:45 | 1              | 23-36                     |
|                     | III        | 2001:15-2001:45 | 1+             | 8-41                      |                     | III        | 1444:15-1444:45 | 1              | 23-36                     |
|                     | III        | 2030:30-2031    | 2              | 15-41                     |                     | III        | 1447-1447:15    | 1              | 25-38                     |
|                     | III        | 2056:30-2057    | 2              | 15-41                     |                     | III        | 1447:45-1448    | 1              | 24-38                     |
|                     | III        | 2058-2058:30    | 2              | 8-41                      |                     | III        | 1450-1450:30    | 1              | 26-37                     |
|                     | III        | 2059-2059:30    | 2              | 8-41                      |                     | III        | 1452:30-1453:15 | 1              | 25-36                     |
|                     | III        | 2320:30-2321:15 | 2+             | 15-41                     |                     | III        | 1454:30-1454:45 | 1-             | 26-38                     |
|                     | III        | 2321:30-2322:15 | 2+             | 15-41                     |                     | III        | 1510:30-1510:45 | 1-             | 24-33                     |
|                     | III        | 2333:15-2334    | 2+             | 11-41                     |                     | III        | 1512:15-1512:30 | 1-             | 23-38                     |
|                     | III        | 0019:30-0020    | 2              | 11-41                     |                     | III        | 1515:15-1516    | 1-             | 23-33                     |
|                     | III        | 1311-1311:45    | 1              | 17-41                     |                     | III        | 1517:15-1517:30 | 1-             | 24-38                     |
|                     | III        | 1537:45-1538    | 1-             | 18-35                     |                     | III        | 1519-1519:15    | 1-             | 21-37                     |
|                     | III        | 1731:45-1732:15 | 1              | 19-41                     |                     | III        | 1521:45-1522    | 1              | 19-41                     |
|                     | III        | 1957:30-1958:30 | 1-             | 22-41                     |                     | III        | 1526:45-1527:15 | 1              | 21-35                     |
| 8                   | no observ. | 1400-1800       |                |                           |                     | III        | 1534:15-1534:45 | 1              | 22-41                     |
|                     | III        | 1822:15-1822:30 | 1-             | 26-29                     |                     | III        | 1536:15-1536:45 | 1              | 24-34                     |
|                     | III        | 1823-1823:15    | 1-             | 27-30                     |                     | III        | 1554:15-1554:30 | 1-             | 26-41                     |
|                     | III        | 1841:30-1841:45 | 1-             | 24-35                     |                     | III        | 1559:30-1559:45 | 1-             | 26-41                     |
|                     | III        | 1843:15-1843:45 | 1-             | 25-36                     |                     | III        | 1600:30-1600:45 | 1-             | 26-36                     |
|                     | III        | 1847:45-1848    | 1-             | 26-37                     |                     | III        | 1603:30-1603:45 | 1-             | 30-37                     |
|                     | III        | 1848:45-1849    | 1-             | 26-30                     |                     | III        | 1606:30-1607:30 | 1+             | 10-41                     |
|                     | III        | 1900:45-1901:15 | 1              | 8-33                      |                     | III        | 1614-1614:15    | 1-             | 19-22                     |
|                     | III        | 1902:45-1903    | 1-             | 33-39                     |                     | III        | 1616-1616:15    | 1              | 22-36                     |
|                     | III        | 1917-1917:30    | 1              | 17-36                     |                     | III        | 1619-1619:30    | 1-             | 19-41                     |
|                     | III        | 1959-1959:15    | 1-             | 25-35                     |                     | III        | 1626-1626:15    | 1-             | 24-36                     |
|                     | III        | 2022-2022:30    | 1+             | 16-41                     |                     | III        | 1626:45-1627    | 2              | 19-41                     |
|                     | III        | 2023:45-2024:15 | 1+             | 16-41                     |                     | III        | 1627-1628:45    | 2              | 12-41                     |
|                     | III        | 2024:30-2025    | 1+             | 24-39                     |                     | III        | 1629:30-1629:45 | 1+             | 22-36                     |
|                     | III        | 2059-2059:30    | 1              | 16-41                     |                     | III        | 1702:30-1703    | 1              | 25-37                     |
|                     | III        | 2104-2104:30    | 1-             | 16-35                     |                     | III        | 1707:45-1708:15 | 1              | 16-38                     |
|                     | III        | 2108-2108:30    | 1              | 16-34                     |                     | III        | 1723:30-1723:45 | 1-             | 26-34                     |
|                     | III        | 2132:30-2133    | 1-             | 25-38                     |                     | III        | 1724:15-1724:30 | 1-             | 26-35                     |
|                     | III        | 2135:15-2135:45 | 1              | 22-38                     |                     | III        | 1725:30-1726    | 1-             | 26-33                     |
|                     | III        | 2138:45-2139:15 | 1-             | 22-38                     |                     | III        | 1729:15-1729:45 | 1-             | 26-40                     |
|                     | III        | 2140:30-2141    | 1-             | 16-35                     |                     | no observ. | 1730-2100       |                |                           |
|                     | III        | 2142:45-2143:15 | 1              | 17-41                     |                     | III        | 2103-2103:30    | 1              | 24-38                     |
|                     | III        | 2145:15-2145:45 | 1              | 22-41                     |                     | III        | 2103:45-2104    | 1-             | 21-41                     |
|                     | III        | 2233:15-2233:45 | 1              | 17-36                     |                     | III        | 2104:15-2104:45 | 1+             | 16-41                     |
|                     | III        | 2243:15-2243:45 | 1+             | 16-41                     |                     | III        | 2110:30-2110:45 | 1-             | 23-41                     |
|                     | III        | 2320:30-2321    | 1+             | 16-41                     |                     | III        | 2206:45-2207    | 1-             | 26-35                     |
|                     | III        | 2329:45-2330    | 1              | 26-41                     |                     | III        | 2241-2241:15    | 1              | 17-38                     |
|                     | III        | 2330:30-2330:45 | 1-             | 26-36                     |                     | III        | 2252:15-2252:45 | 1              | 24-41                     |



# SOLAR RADIO EMISSION SPECTRAL OBSERVATIONS

IVg

SEPTEMBER 1965

**High Altitude Observatory  
Boulder**

**7.6-41 Mcs**

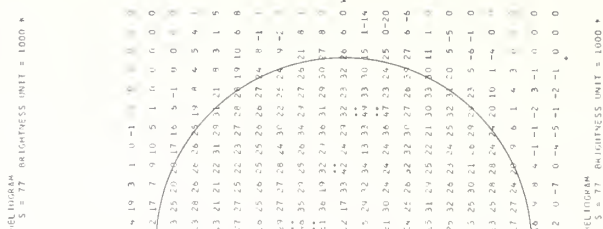
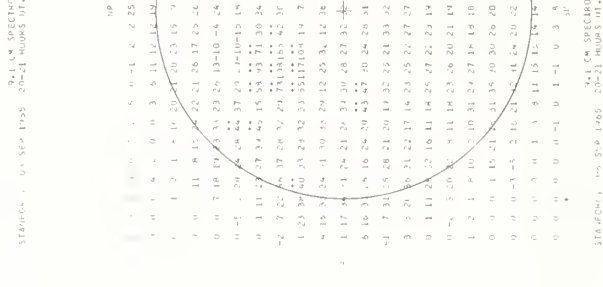
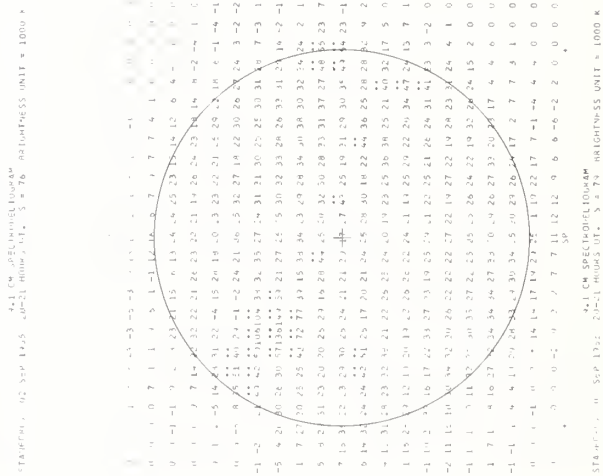
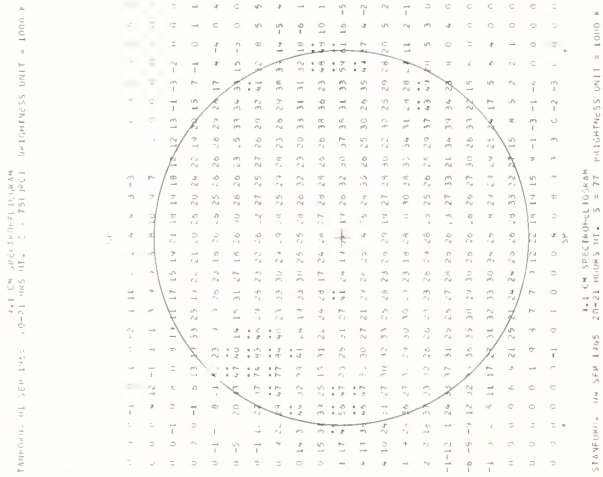
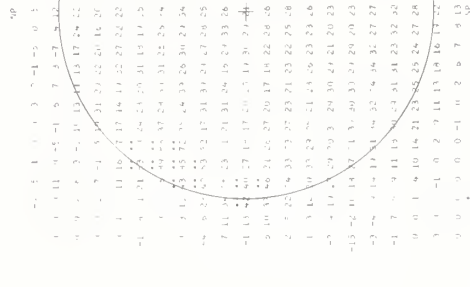
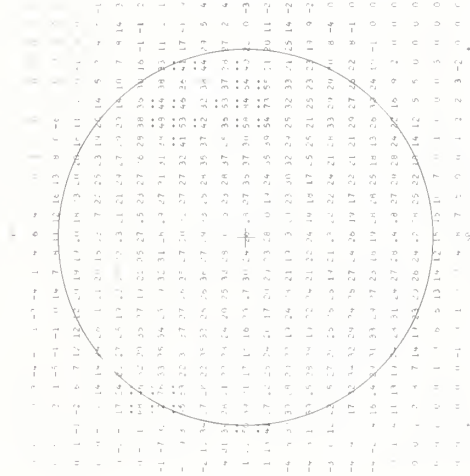
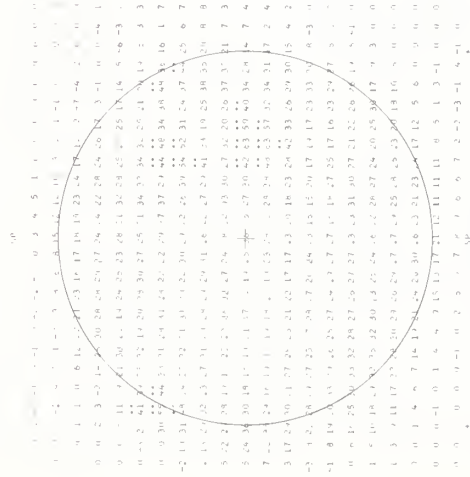
| Date<br>Sep<br>1965 | Bursts |                 |                | Frequency<br>Range (Mc/s) | Date<br>Sep<br>1965 | Bursts     |                 |                | Frequency<br>Range (Mc/s) |
|---------------------|--------|-----------------|----------------|---------------------------|---------------------|------------|-----------------|----------------|---------------------------|
|                     | Type   | Time (U.T.)     | Inten-<br>sity |                           |                     | Type       | Time (U.T.)     | Inten-<br>sity |                           |
| cont.<br>9 Sep      | III    | 2253-2253:15    | 1              | 16-41                     | cont.<br>10 Sep     | III        | 2345:15-2345:30 | 1-             | 23-41                     |
|                     | III    | 2316-2316:15    | 1-             | 24-41                     |                     | III        | 2349:15-2351:15 | 2              | 13-41                     |
|                     | III    | 2316:30-2317:15 | 2              | 18-41                     | 11                  | III        | 0004:15-0004:45 | 1              | 13-41                     |
|                     | III    | 2345-2345:30    | 1+             | 18-41                     |                     | no observ. | 1400-1948       |                |                           |
|                     | III    | 2345:45-2346:15 | 1              | 18-41                     |                     | III        | 2242:30-2243    | 1-             | 26-36                     |
| 10                  | III    | 2354:15-2354:30 | 1-             | 20-38                     | 12                  | III        | 1640:30-1640:45 | 1-             | 27-33                     |
|                     | III    | 0000:30-0000:45 | 1-             | 25-41                     |                     | III        | 1719:45-1720    | 1-             | 1 <sup>c</sup> -41        |
|                     | III    | 0005-0005:15    | 1-             | 22-41                     |                     | III        | 1720:15-1724:30 | 3              | 7.6-41                    |
|                     | III    | 0006-0006:15    | 1-             | 32-39                     |                     | III        | 1725-1725:45    | 2              | 15-41                     |
|                     | III    | 0006:30-0006:45 | 1-             | 29-41                     |                     | III        | 1732:30-1732:45 | 1              | 25-41                     |
|                     | III    | 1417:15-1417:30 | 1-             | 24-41                     |                     | III        | 1929:30-1929:45 | 1-             | 22-36                     |
|                     | III    | 1417:45-1418:15 | 1-             | 18-41                     |                     | III        | 2005:30-2006    | 1-             | 11-32                     |
|                     | III    | 1435:15-1436:30 | 1-             | 17-41                     |                     | III        | 2008:45-2009:45 | 1              | 10-41                     |
|                     | III    | 1513:30-1513:45 | 1-             | 21-41                     |                     | III        | 2121:45-2122    | 1-             | 23-37                     |
|                     | III    | 1516:45-1517    | 1-             | 31-36                     |                     | III        | 2157:15-2157:30 | 1-             | 26-37                     |
|                     | III    | 1524:45-1525:15 | 1-             | 19-35                     | 13                  | III        | 2325-2325:30    | 1-             | 26-41                     |
|                     | III    | 1544:30-1545    | 1-             | 12-41                     |                     | no observ. | 1434-1618       |                |                           |
|                     | III    | 1545:30-1546    | 2              | 12-41                     |                     | III        | 2222-2222:30    | 1-             | 18-41                     |
|                     | III    | 1559:30-1600:45 | 3              | 10-41                     |                     | III        | 2224:15-2224:30 | 1-             | 15-41                     |
|                     | III    | 1605:15-1605:45 | 1+             | 18-41                     |                     | III        | 2308-2308:30    | 1              | 16-41                     |
|                     | III    | 1632:30-1633    | 1              | 18-41                     | 14                  | III        | 2309:30-2309:45 | 1-             | 24-41                     |
|                     | III    | 1636:15-1636:30 | 1-             | 24-41                     |                     | III        | 2336:30-2337:30 | 1              | 13-41                     |
|                     | III    | 1708:45-1709:30 | 1-             | 23-41                     |                     | III        | 2337:45-2339    | 2              | 11-41                     |
|                     | III    | 1737:30-1737:45 | 1-             | 25-41                     |                     | III        | 2340:30-2340:45 | 1-             | 24-41                     |
|                     | III    | 1740-1741       | 1+             | 8-41                      |                     | III        | 0020-0020:45    | 2              | 16-41                     |
|                     | III    | 1745:45-1746    | 1-             | 26-41                     | 15                  | III        | 0022-0022:30    | 1+             | 16-41                     |
|                     | III    | 1926-1926:45    | 2              | 12-41                     |                     | III        | 0022:45-0023    | 1+             | 16-41                     |
|                     | III    | 2005:30-2006:15 | 1-             | 26-41                     |                     | III        | 1431:15-1431:30 | 1-             | 22-36                     |
|                     | III    | 2033-2033:15    | 1-             | 26-41                     |                     | no observ. | 1536-1643       |                |                           |
|                     | III    | 2034:30-2034:45 | 1-             | 25-41                     |                     | III        | 2054:30-2055    | 1              | 19-41                     |
|                     | III    | 2056:30-2056:45 | 1-             | 27-37                     | 16                  | no observ. | 1630-2000       |                |                           |
|                     | III    | 2059-2101:45    | 1              | 22-41                     | 17                  | III        | 1737:30-1738:15 | 1-             | 16-41                     |
|                     | III    | 2110-2110:45    | 2              | 19-41                     | 18                  | no observ. | 1755-2207       |                |                           |
|                     | III    | 2113:15-2113:30 | 1-             | 19-35                     | 19                  | no observ. | 2023-2135       |                |                           |
|                     | III    | 2115:15-2115:45 | 1              | 19-41                     | 20                  | no observ. | 1609-1632       |                |                           |
|                     | III    | 2238:15-2238:30 | 1              | 18-37                     | 24                  | III        | 1632:30-1633:30 | 2              | 17-41                     |
|                     | III    | 2239:15-2239:45 | 1+             | 16-41                     | 25                  | III        | 2230:15-2231    | 1              | 27-41                     |
|                     | III    | 2240-2242       | 2              | 11-41                     |                     | III        | 2240:45-2242    | 1+             | 22-41                     |
|                     | III    | 2322:45-2323    | 1-             | 28-41                     | 30                  | III        | 1906:45-1907:15 | 1              | 18-41                     |
|                     | III    | 2324:30-2324:45 | 1-             | 24-41                     |                     |            |                 |                |                           |

## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

SEPTEMBER 1963

9.1 cm



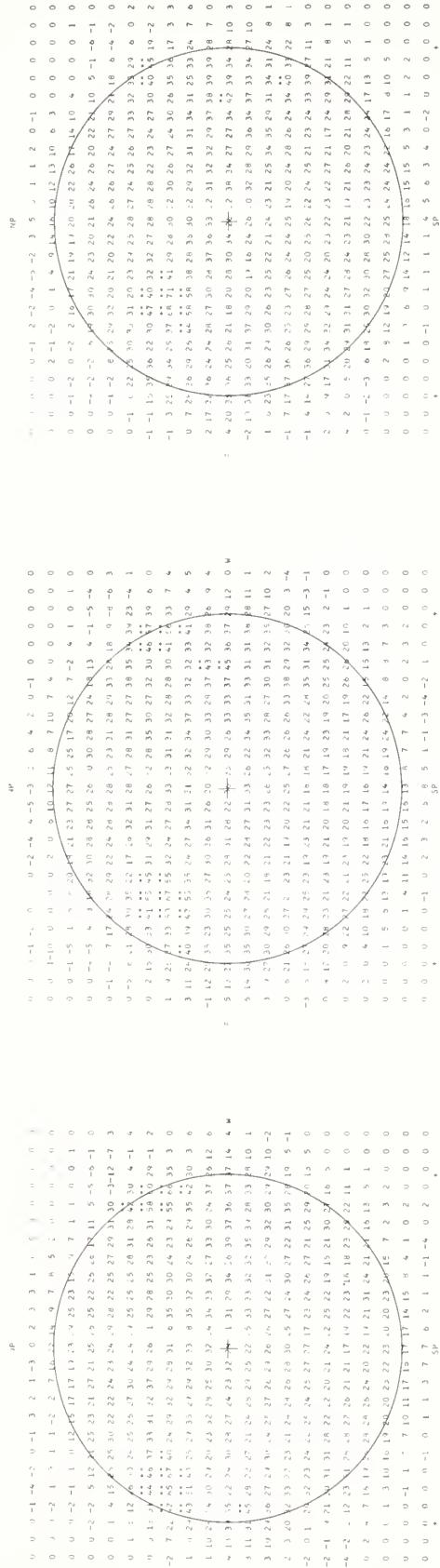


## SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

SEPTEMBER 1965

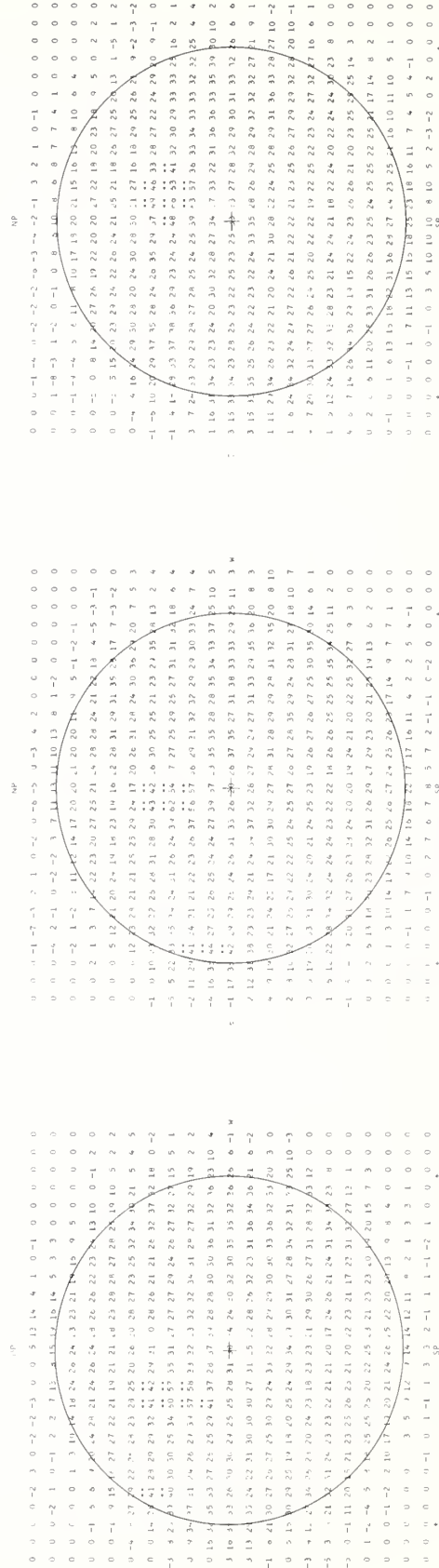
9.1 cm



STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.

STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.

STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.



STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.

STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.

STANFORD, 15 SEP 1965. 20-21 HOURS UT. S = 75. BRIGHTNESS UNIT = 1000.

# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

STANFORD

SEPTEMBER 1965

9.1 cm

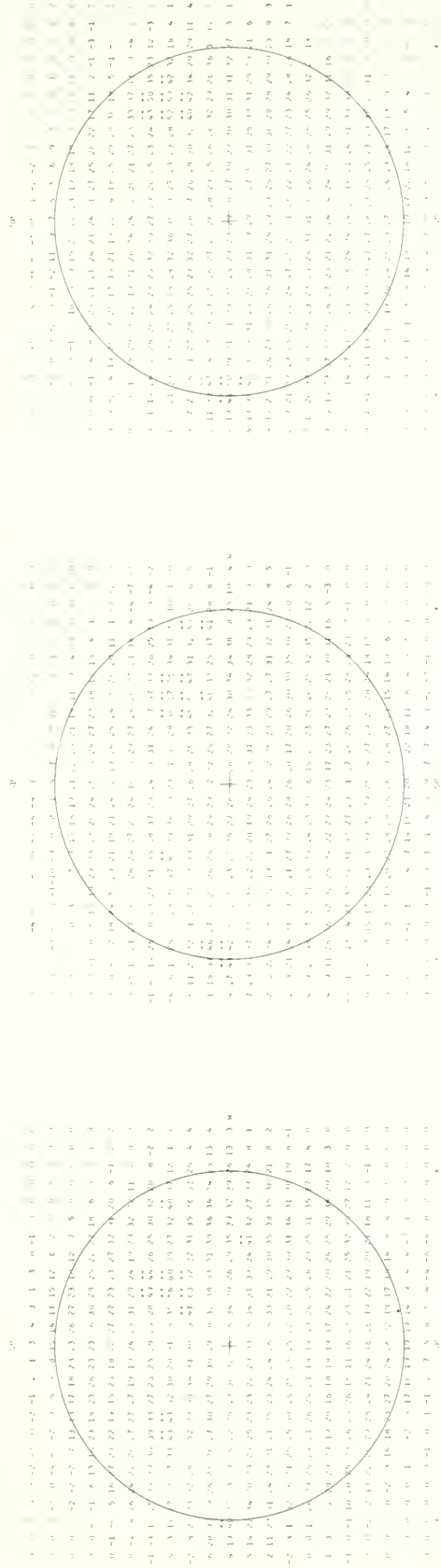


Figure 1. Two circular spectroheliograms showing solar radio emission at 9.1 cm. The left image is labeled 'SEP' and the right image is labeled 'SEP'. Both images show a large circular field of view with a grid of latitude and longitude lines. The data is presented as a series of numbers arranged in a grid, representing the intensity of the radio emission at different positions on the solar disk. The numbers are arranged in a grid that is roughly circular, matching the shape of the solar disk. The grid is composed of many small squares, each containing a number. The numbers are arranged in a way that suggests a spatial distribution of the radio emission. The left image shows a more uniform distribution, while the right image shows some variations in intensity, particularly in the lower right quadrant.

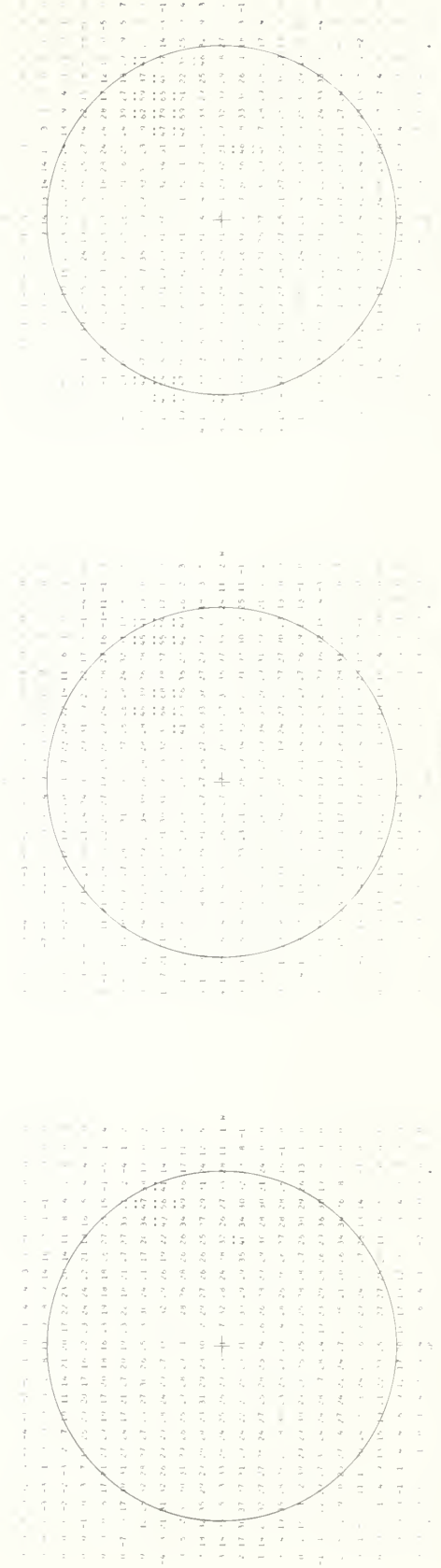


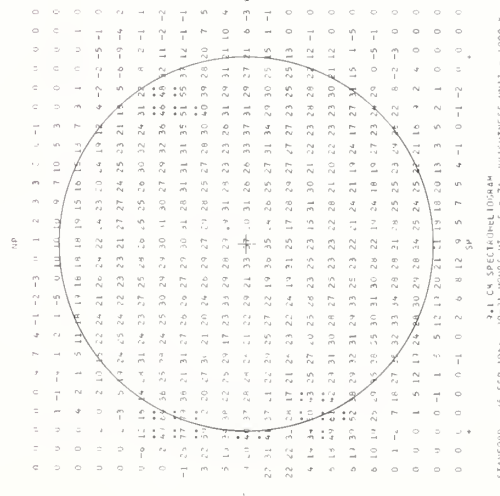
Figure 2. Two circular spectroheliograms showing solar radio emission at 9.1 cm. The left image is labeled 'SEP' and the right image is labeled 'SEP'. Both images show a large circular field of view with a grid of latitude and longitude lines. The data is presented as a series of numbers arranged in a grid, representing the intensity of the radio emission at different positions on the solar disk. The numbers are arranged in a grid that is roughly circular, matching the shape of the solar disk. The grid is composed of many small squares, each containing a number. The numbers are arranged in a way that suggests a spatial distribution of the radio emission. The left image shows a more uniform distribution, while the right image shows some variations in intensity, particularly in the lower right quadrant.

# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

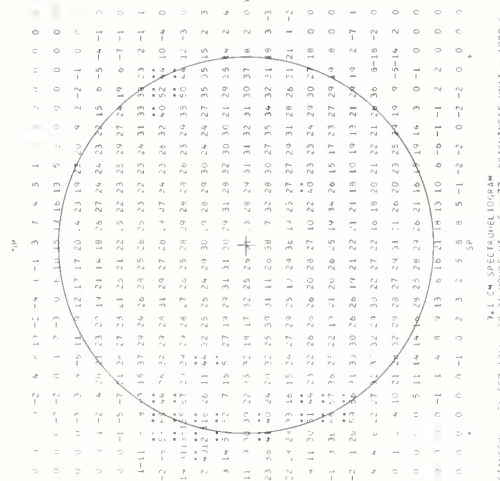
STANFORD

SEPTEMBER 1965

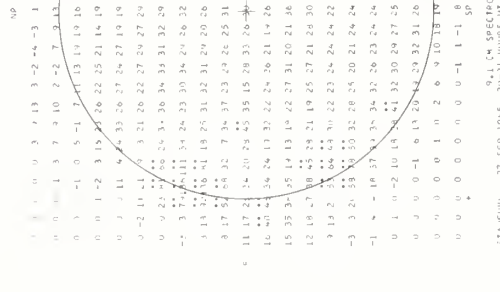
9.1 cm



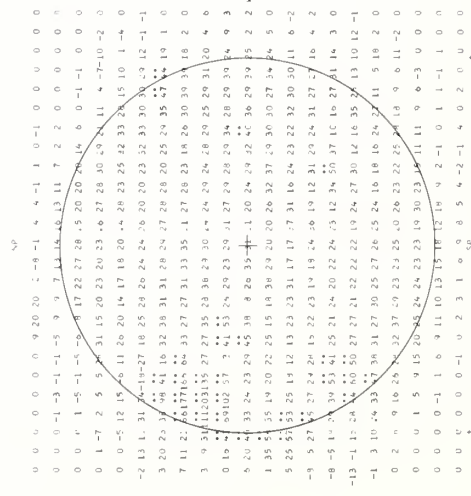
STANFORD, 24 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



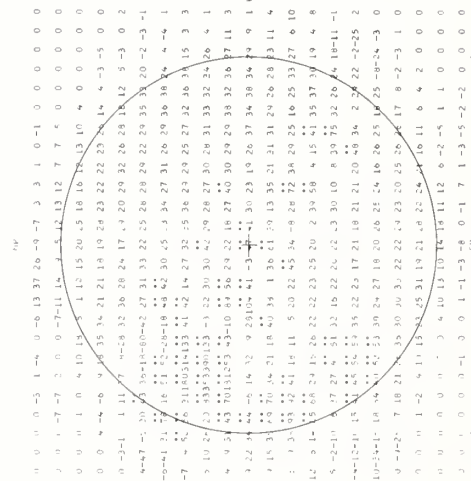
STANFORD, 26 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



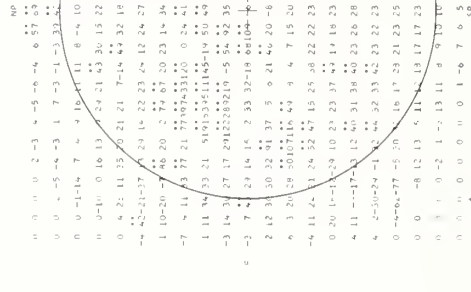
STANFORD, 27 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



STANFORD, 28 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



STANFORD, 29 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



STANFORD, 30 SEP 1965 20-21 MUONS UT. 5.0-6.1. BRIGHTNESS UNIT = 1000 K



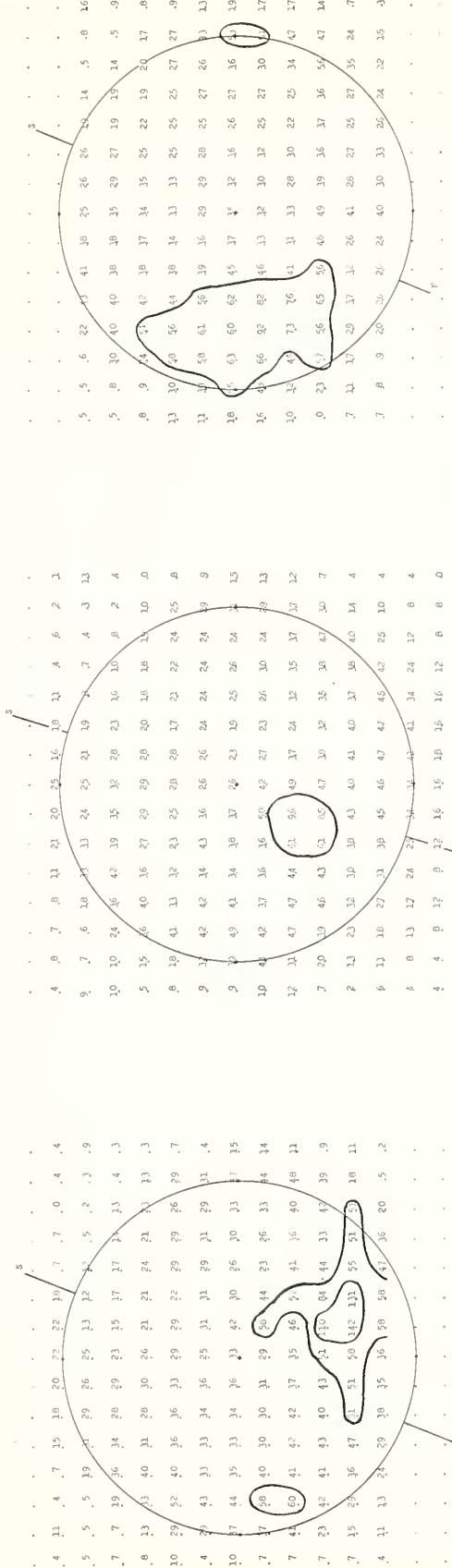
SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FLEURS, AUSTRALIA

MARCH 1965

21 cm

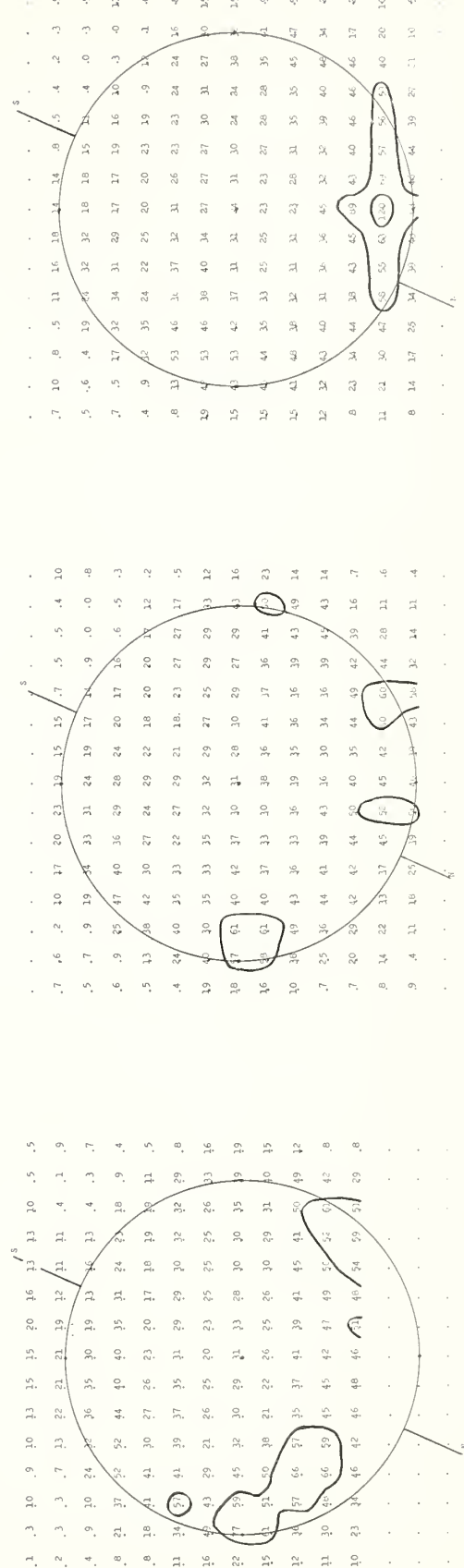
Resolution: about 3 minutes of arc.  
Unit of Brightness temperature: 1700°K



1965 MARCH 1 0230 UT

1965 MARCH 3 0230 UT

1965 MARCH 5 0230 UT



1965 MARCH 8 0230 UT

1965 MARCH 12 0230 UT

1965 MARCH 15 0230 UT

IVm

# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

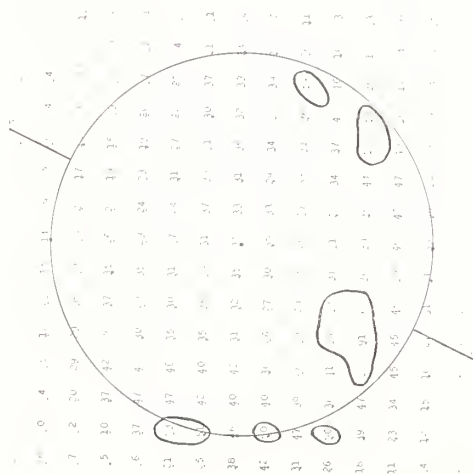
1Vn

FLEURS, AUSTRALIA

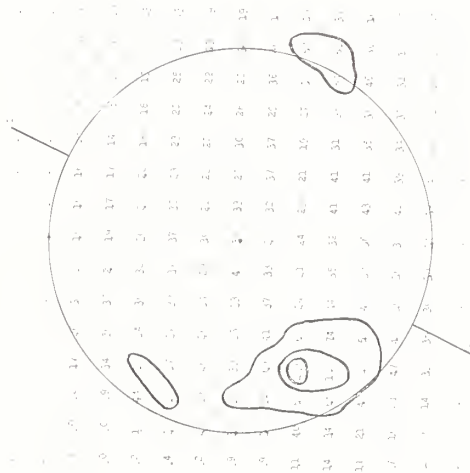
MARCH 1965

21 cm

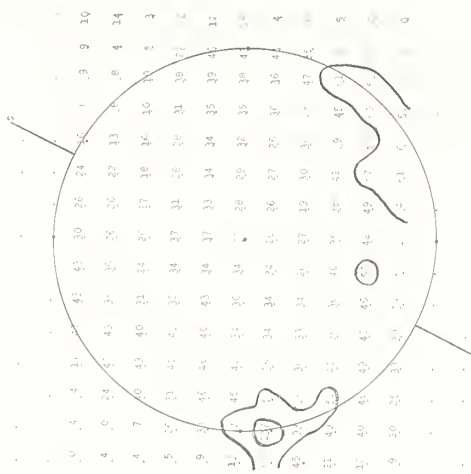
Resolution about 3 minutes of arc.  
Unit of Brightness temperature: 1700°K



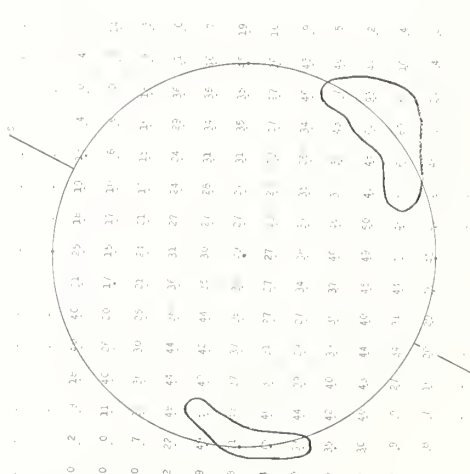
1965 MARCH 17 0230 UT



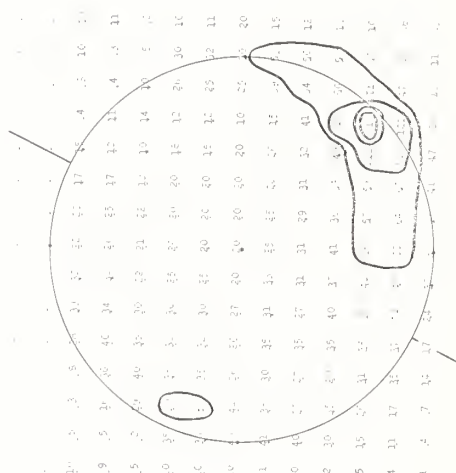
1965 MARCH 19 0230 UT



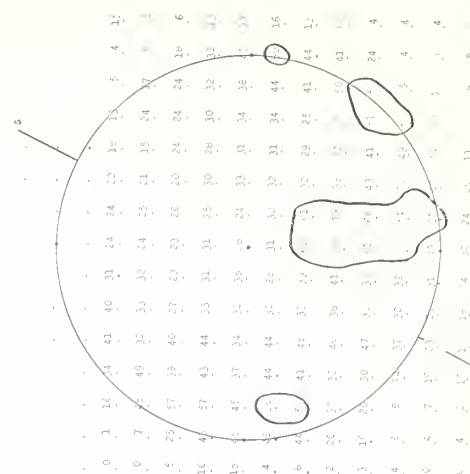
1965 MARCH 22 0230 UT



1965 MARCH 24 0230 UT



1965 MARCH 26 0230 UT



1965 MARCH 29 0230 UT



# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

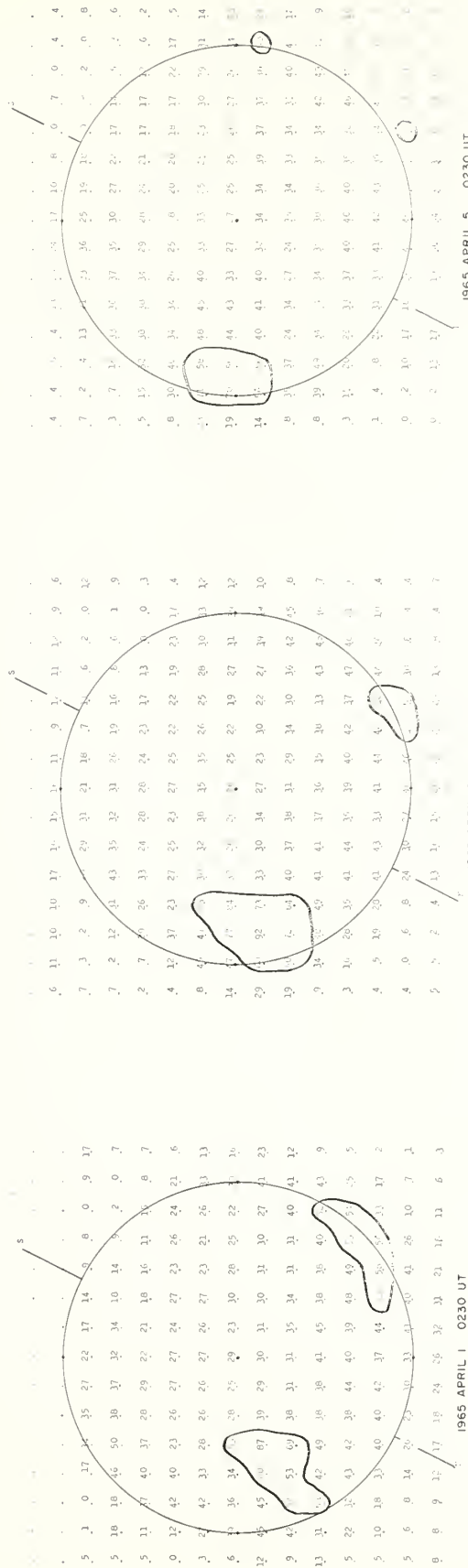
FLEURS, AUSTRALIA

APRIL 1965

21 cm

Resolution: about 3 minutes of arc.

Unit of Brightness temperature: 1700°K



# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

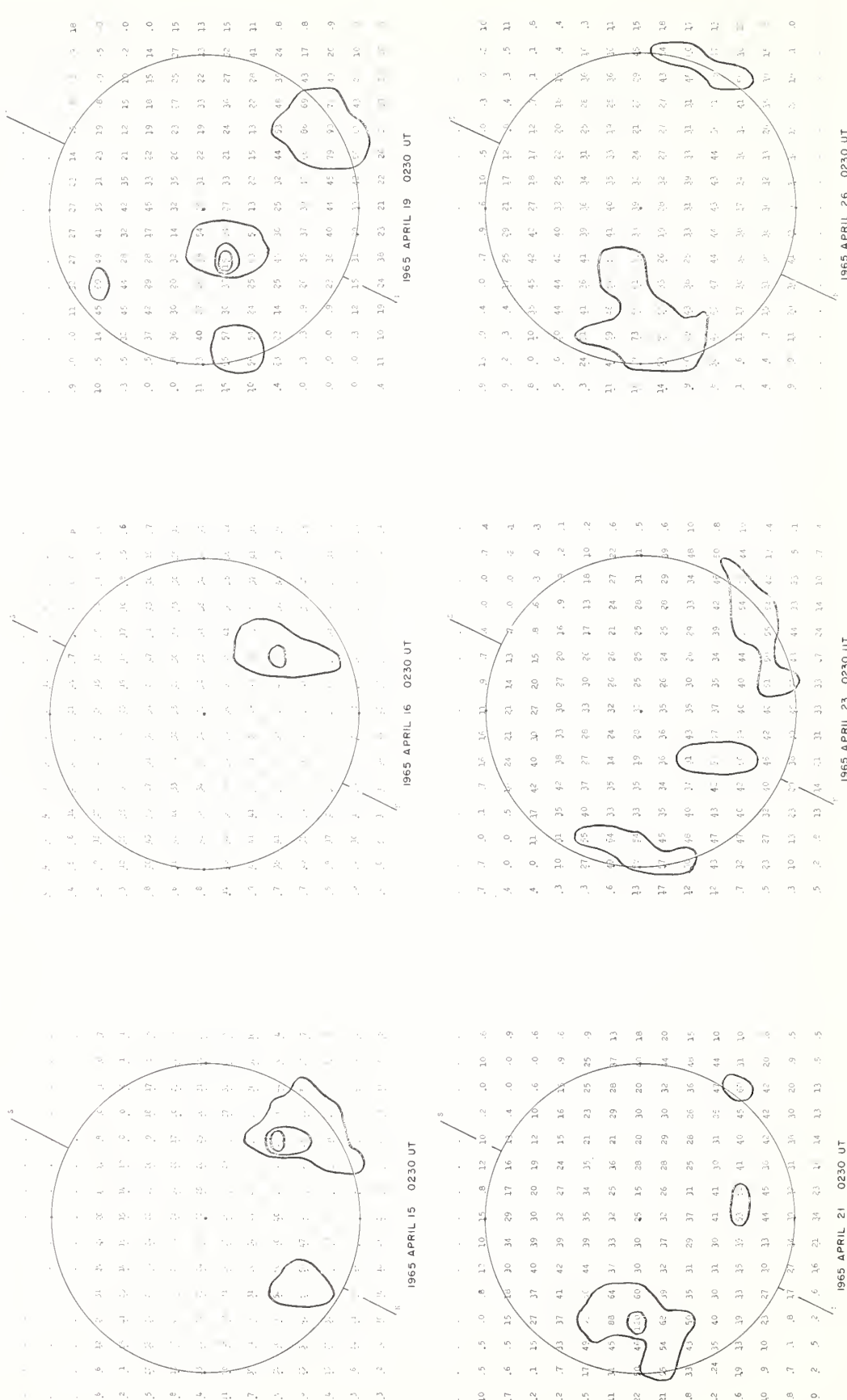
IVp

FLEURS, AUSTRALIA

APRIL 1965

21cm

Resolution: about 3 minutes of arc.  
Unit of Brightness temperature: 1700°K

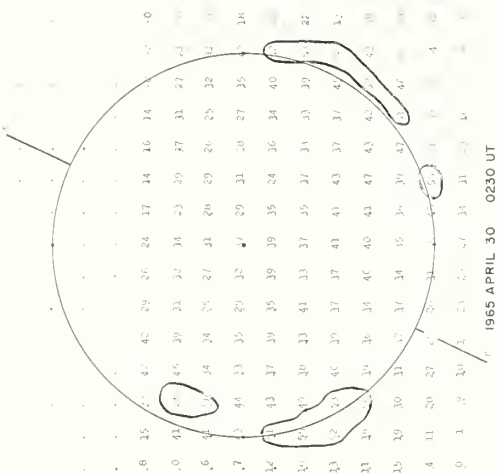
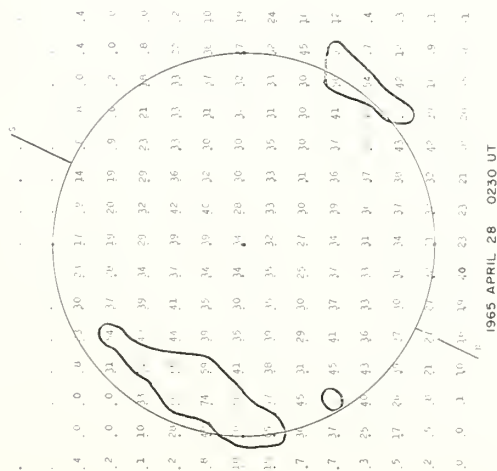


# SOLAR RADIO EMISSION SPECTROHELIOGRAMS

FLEURS, AUSTRALIA

APRIL 1965

21cm  
Resolution about 3 minutes of arc.  
Unit of Brightness temperature: 1700°K



## COSMIC RAY INDICES

(Neutron Monitors)

AUGUST 1965

| AUG.<br>1965 | CHURCHILL                        | CLIMAX                           | DALLAS                           |
|--------------|----------------------------------|----------------------------------|----------------------------------|
|              | DAILY AVERAGE<br>COUNTS PER HOUR | DAILY AVERAGE<br>COUNTS PER HOUR | DAILY AVERAGE<br>COUNTS PER HOUR |
| 1            | 6488.8 (20)                      | 3312.2                           | 6427.6                           |
| 2            | 6493.3                           | 3317.2                           | 6443.1                           |
| 3            | 6508.5                           | 3325.1                           | 6468.5                           |
| 4            | 6518.6                           | 3330.8                           | 6455.8                           |
| 5            | 6515.9 (22)                      | 3331.5                           | 6442.4                           |
| 6            | 6531.3 (20)                      | 3340.5                           | 6450.7                           |
| 7            | 6535.2                           | 3331.7                           | 6429.1                           |
| 8            | 6518.2                           | 3324.7                           | 6428.8                           |
| 9            | 6518.5                           | 3327.9                           | 6436.8                           |
| 10           | 6522.8                           | 3327.1                           | 6441.6                           |
| 11           | 6529.6                           | 3330.8                           | 6456.0                           |
| 12           | 6523.4                           | 3329.0                           | 6463.0                           |
| 13           | 6538.7                           | 3338.0                           | 6457.6                           |
| 14           | 6559.6                           | 3342.8                           | 6455.6                           |
| 15           | 6541.5                           | 3333.5                           | 6436.7                           |
| 16           | 6460.9                           | 3281.1                           | 6352.8                           |
| 17           | 6480.2                           | 3303.0                           | 6393.3                           |
| 18           | 6496.1                           | 3308.1                           | 6408.4                           |
| 19           | 6474.5                           | 3307.5                           | 6402.1                           |
| 20           | 6481.3                           | 3311.4                           | 6409.6                           |
| 21           | 6476.4                           | 3321.6                           | 6424.9                           |
| 22           | 6464.5                           | 3301.8                           | 6392.0                           |
| 23           | 6492.3                           | 3305.3                           | 6381.5                           |
| 24           | 6466.4                           | 3302.4                           | 6363.2                           |
| 25           | 6470.2                           | 3303.9                           | 6370.9                           |
| 26           | 6474.0                           | 3300.8                           | 6377.8                           |
| 27           | 6465.2                           | 3301.9                           | 6378.8                           |
| 28           | 6469.0                           | 3308.6                           | 6390.9                           |
| 29           | 6500.0                           | 3317.6                           | 6392.3                           |
| 30           | 6505.3                           | 3322.9 (30)                      | 6401.1 (20)                      |
| 31           | 6503.9                           | 3315.5                           | 6395.8 (23)                      |

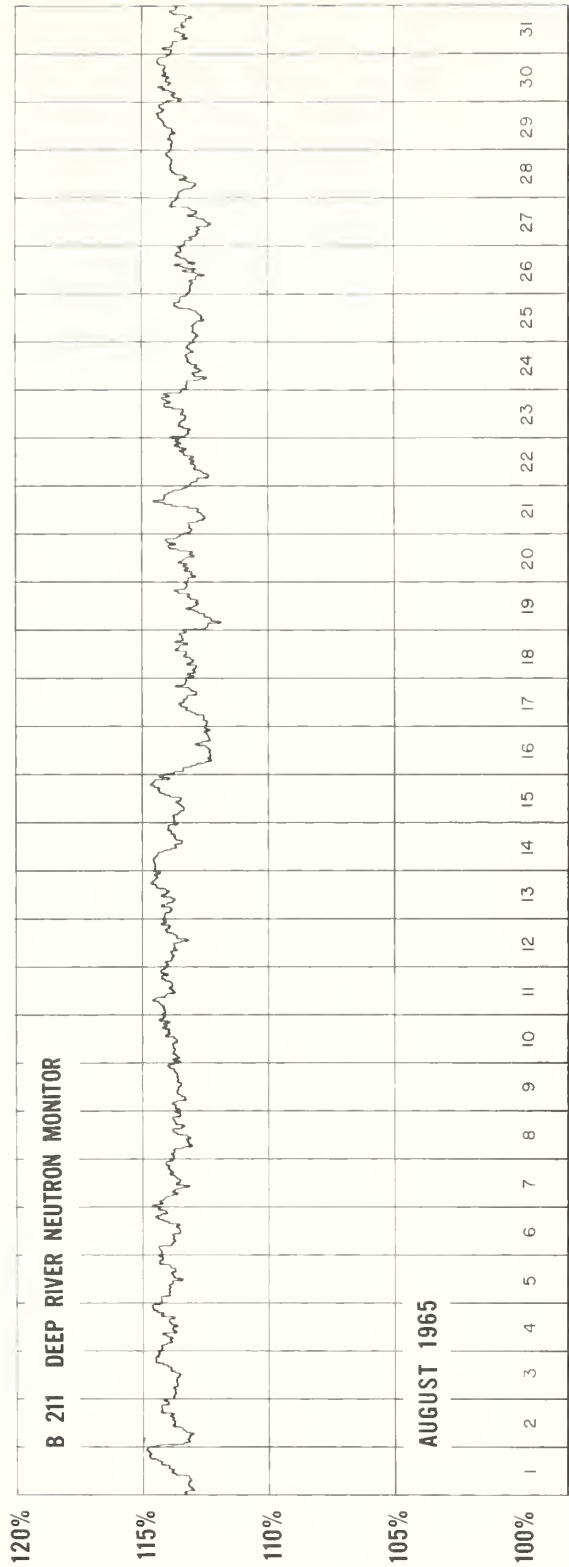
( ) Number of hours for which data are available if less than 24 (or number of section hours if less than 40 for Climax).

Churchill Super Neutron Monitor, Scaling Factor 120.

Climax IGC Station B305, Scaling Factor 128.

Dallas Super Neutron Monitor, Scaling Factor 120.

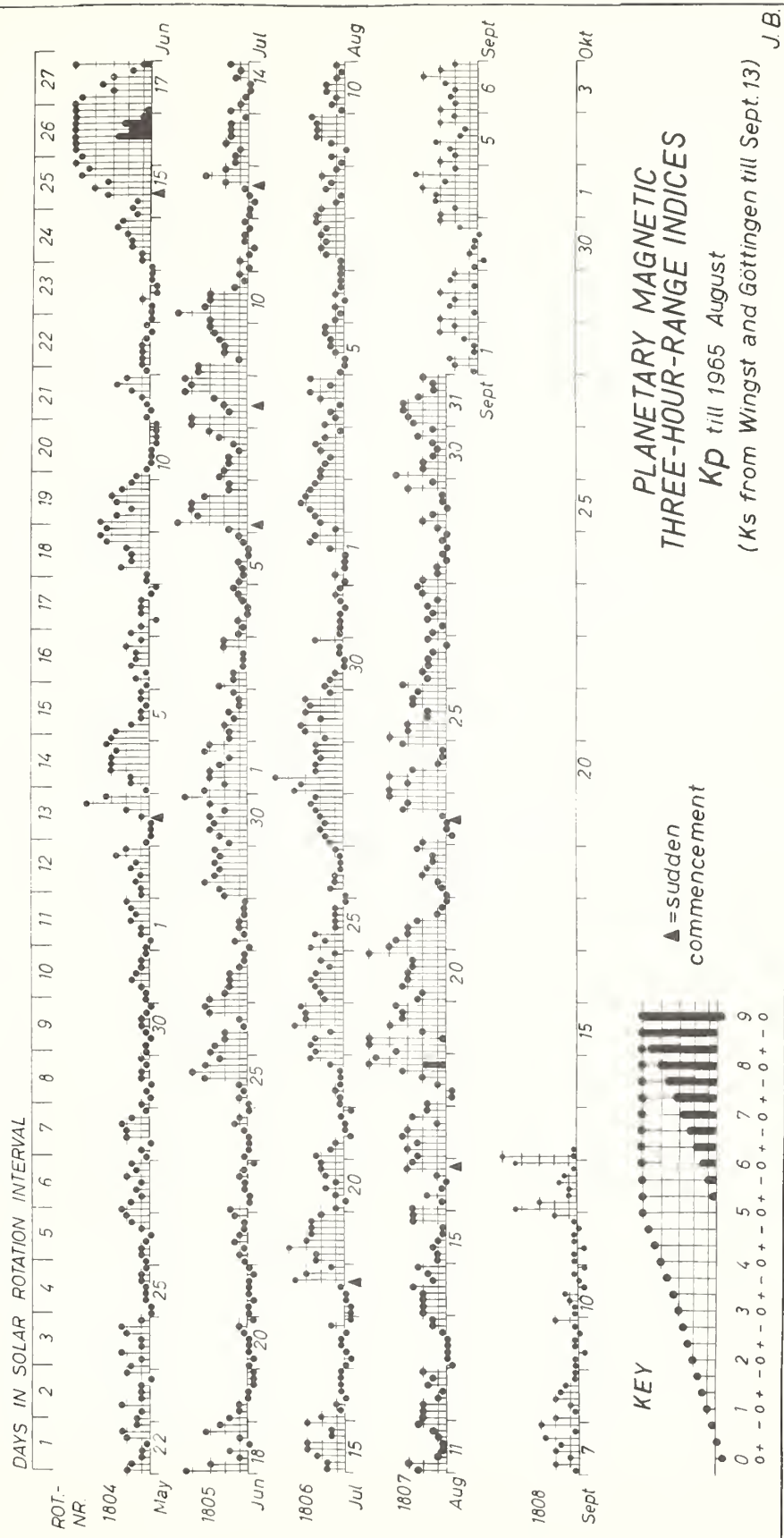
# COSMIC RAY INDICES (Pressure Corrected Hourly Totals)



## GEOMAGNETIC ACTIVITY INDICES

AUGUST 1965

| August<br>1965 | C    | Values Kp               |    |    |    |    |    |    |    | Sum   | Ap | Final<br>Selected<br>Days |
|----------------|------|-------------------------|----|----|----|----|----|----|----|-------|----|---------------------------|
|                |      | Three hour Gr. interval |    |    |    |    |    |    |    |       |    |                           |
|                |      | 1                       | 2  | 3  | 4  | 5  | 6  | 7  | 8  |       |    |                           |
| 1              | 0.3  | 0+                      | 1o | 0+ | 0+ | 0+ | 1+ | 3- | 2+ | 9-    | 5  | Five<br>Quiet             |
| 2              | 0.8  | 1o                      | 2o | 2+ | 3- | 3+ | 3o | 3- | 2+ | 19+   | 11 |                           |
| 3              | 0.5  | 2o                      | 2o | 2- | 1+ | 2o | 2+ | 2- | 1- | 14-   | 6  |                           |
| 4              | 0.6  | 2-                      | 1o | 1+ | 1- | 2o | 3- | 1+ | 3- | 13+   | 7  |                           |
| 5              | 0.1  | 1-                      | 0+ | 0+ | 1o | 1+ | 1+ | 2- | 2- | 8+    | 4  |                           |
| 6              | 0.1  | 1o                      | 1- | 1o | 0+ | 1o | 1- | 1- | 1- | 6o    | 3  | 10                        |
| 7              | 0.4  | 1-                      | 1- | 2- | 2o | 2- | 2o | 2- | 2+ | 13-   | 6  | 13                        |
| 8              | 0.5  | 2+                      | 2o | 1o | 1- | 2- | 1+ | 2o | 1o | 12o   | 6  | 28                        |
| 9              | 0.5  | 1-                      | 1+ | 0+ | 1+ | 2+ | 2+ | 2+ | 3- | 13+   | 7  |                           |
| 10             | 0.2  | 1-                      | 1+ | 1o | 2- | 2- | 1o | 1- | 1o | 9o    | 4  |                           |
| 11             | 0.5  | 2+                      | 3o | 1o | 1- | 1- | 1o | 1+ | 2+ | 12+   | 6  | Five<br>Disturbed         |
| 12             | 0.4  | 2o                      | 2o | 2o | 1o | 1- | 2- | 1+ | 2o | 13-   | 6  |                           |
| 13             | 0.0  | 0o                      | 0+ | 0+ | 0+ | 0+ | 1- | 1+ | 1+ | 5-    | 3  |                           |
| 14             | 0.6  | 2o                      | 2o | 2o | 2o | 3- | 1+ | 2- | 2+ | 16o   | 8  |                           |
| 15             | 0.4  | 1o                      | 1o | 1+ | 1o | 1- | 1- | 3- | 3- | 11o   | 6  |                           |
| 16             | 0.4  | 3-                      | 1- | 2- | 1- | 0+ | 1o | 3o | 3- | 13-   | 7  | 24                        |
| 17             | 0.7  | 2+                      | 3o | 2+ | 3+ | 3o | 1o | 3- | 2- | 19+   | 11 | 25                        |
| 18             | 1.0  | 2-                      | 0o | 0o | 1o | 2o | 3+ | 6+ | 5- | 19o   | 21 |                           |
| 19             | 1.4  | 4-                      | 5o | 5+ | 2o | 4o | 3+ | 3+ | 4- | 30+   | 27 |                           |
| 20             | 1.2  | 2+                      | 2o | 3+ | 3o | 3o | 3- | 3- | 5o | 24o   | 17 |                           |
| 21             | 0.8  | 4o                      | 4- | 3o | 3o | 2+ | 1o | 1- | 0+ | 18o   | 12 | Ten<br>Quiet              |
| 22             | 0.3  | 0+                      | 1- | 1o | 2o | 2- | 1+ | 1+ | 2+ | 11-   | 5  |                           |
| 23             | 0.5  | 2o                      | 0o | 0+ | 0+ | 1- | 3+ | 3o | 4o | 14-   | 9  |                           |
| 24             | 0.9  | 4o                      | 3o | 4o | 3- | 1o | 1- | 1- | 3+ | 19+   | 14 |                           |
| 25             | 0.8  | 4o                      | 3o | 3o | 2- | 2- | 3- | 3- | 2+ | 21o   | 13 |                           |
| 26             | 0.5  | 3+                      | 2- | 2o | 2- | 2- | 1+ | 0+ | 2- | 14-   | 7  | 6                         |
| 27             | 0.4  | 1+                      | 1- | 2- | 1+ | 2- | 1o | 2o | 2+ | 12o   | 6  | 10                        |
| 28             | 0.0  | 2o                      | 1o | 1o | 0+ | 1- | 0+ | 1- | 0+ | 6+    | 3  | 13                        |
| 29             | 0.3  | 1o                      | 2o | 1+ | 0+ | 1- | 1- | 3o | 1+ | 10+   | 6  | 15                        |
| 30             | 0.6  | 4-                      | 2o | 2o | 1+ | 1o | 1+ | 2+ | 1+ | 15o   | 8  | 22                        |
| 31             | 0.7  | 3-                      | 3o | 3+ | 3+ | 2+ | 1+ | 1+ | 2o | 19+   | 11 | 27                        |
|                |      |                         |    |    |    |    |    |    |    |       |    | 28                        |
|                |      |                         |    |    |    |    |    |    |    |       |    | 29                        |
| Mean:          | 0.53 |                         |    |    |    |    |    |    |    | Mean: | 9  |                           |



## CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC, NORTH PACIFIC

AUGUST 1965

| AUG.<br>1965 | WHOLE DAY         |                  |                             | ADVANCE<br>FORECASTS<br>(Jc-<br>REPORTS)<br>FOR<br>WHOLE<br>DAY | NORTH ATLANTIC              |                |                |                |  |                |                |                | NORTH PACIFIC               |                |                |                | GEOMAGNETIC INDICES |     |                 |                |                 |     |                 |  |  |
|--------------|-------------------|------------------|-----------------------------|---|-----------------------------|----------------|----------------|----------------|--|----------------|----------------|----------------|-----------------------------|----------------|----------------|----------------|---------------------|-----|-----------------|----------------|-----------------|-----|-----------------|--|--|
|              | INDICES           |                  |                             |   | 6-HOURLY<br>QUALITY FIGURES |                |                |                | SHORT-TERM FORECASTS<br>ISSUED ABOUT ONE<br>HOUR IN ADVANCE DF |                |                |                | 6-HOURLY<br>QUALITY FIGURES |                |                |                | K <sub>FR</sub>     |     | A <sub>FR</sub> |                | K <sub>SI</sub> |     | A <sub>SI</sub> |  |  |
|              | NORTH<br>ATLANTIC | NORTH<br>PACIFIC | AVERAGE<br>HIGH<br>LATITUDE |   | 00<br>TO<br>06              | 06<br>TO<br>12 | 12<br>TO<br>18 | 18<br>TO<br>24 | 00<br>TO<br>06   | 06<br>TO<br>12 | 12<br>TO<br>18 | 18<br>TO<br>24 | 00<br>TO<br>06              | 06<br>TO<br>12 | 12<br>TO<br>18 | 18<br>TO<br>24 | HALF DAY            |     | DB-<br>SERVED   | PRE-<br>DICTED | HALF DAY        |     | A <sub>SI</sub> |  |  |
|              |                   |                  |                             |   |                             |                |                |                |  |                |                |                |                             |                |                |                | (1)                 | (2) |                 |                | (1)             | (2) |                 |  |  |
| 01           | 7-                | 5                | 6                           | 7   | 7-                          | 6+             | 6+             | 7-             | 7  | 6              | 7              | 7              | 5                           | 5              | 6              | 6              | 1                   | 2   | 5               | 3              | 0               | 1   | 2               |  |  |
| 02           | 7-                | 5                | 6                           | 6   | 7-                          | 6+             | 7-             | 7-             | 6  | 6              | 7              | 6              | 5                           | 5              | 5              | 6              | 3                   | 3   | 13              | 11             | 2               | 2   | 11              |  |  |
| 03           | 6+                | 6                | 6                           | 6   | 7-                          | 50             | 6+             | 7-             | 6  | 6              | 7              | 7              | 5                           | 5              | 6              | 6              | 2                   | 1   | 5               | 15             | 2               | 1   | 7               |  |  |
| 04           | 6+                | 6                | 6                           | 6   | 60                          | 6-             | 7-             | 7-             | 7  | 6              | 7              | 7              | 5                           | 5              | 6              | 6              | 2                   | 2   | 6               | 13             | 1               | 1   | 4               |  |  |
| 05           | 6+                | 6                | 6                           | 6   | 6+                          | 60             | 7-             | 7-             | 7  | 6              | 7              | 7              | 5                           | 5              | 6              | 7              | 1                   | 1   | 5               | 12             | 1               | 1   | 2               |  |  |
| 06           | 6+                | 6                | 6                           | 6   | 6+                          | 6+             | 6+             | 7-             | 7  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 1                   | 1   | 3               | 10             | 1               | 1   | 2               |  |  |
| 07           | 7-                | 6                | 6                           | 6   | 6+                          | 6-             | 7-             | 70             | 7  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 2   | 7               | 6              | 1               | 2   | 5               |  |  |
| 08           | 7-                | 6                | 6                           | 7   | 7-                          | 7-             | 70             | 70             | 7  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 1   | 6               | 5              | 1               | 1   | 4               |  |  |
| 09           | 7-                | 6                | 6                           | 7   | 7-                          | 6+             | 7-             | 70             | 7  | 6              | 7              | 7              | 5                           | 5              | 6              | 6              | 2                   | 2   | 7               | 3              | 1               | 1   | 3               |  |  |
| 10           | 60                | 6                | 6                           | 7   | 6+                          | 5+             | 6+             | 7-             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 2   | 6               | 3              | 1               | 1   | 3               |  |  |
| 11           | 7-                | 6                | 6                           | 7   | 6+                          | 6+             | 7-             | 7-             | 6  | 6              | 7              | 7              | 5                           | 5              | 6              | 6              | 2                   | 2   | 8               | 7              | 2               | 1   | 5               |  |  |
| 12           | 6+                | 6                | 6                           | 7   | 6+                          | 5-             | 70             | 7-             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 2   | 8               | 3              | 2               | 1   | 6               |  |  |
| 13           | 7-                | 6                | 6                           | 7   | 7-                          | 60             | 7-             | 70             | 6  | 6              | 7              | 7              | 6                           | 6              | 6              | 6              | 0                   | 1   | 3               | 3              | 0               | 1   | 2               |  |  |
| 14           | 6+                | 6                | 6                           | 7   | 6+                          | 6-             | 7-             | 7-             | 7  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 2   | 8               | 5              | 2               | 2   | 7               |  |  |
| 15           | 6+                | 6                | 6                           | 6   | 6+                          | 5+             | 70             | 70             | 7  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 1                   | 2   | 6               | 7              | 2               | 2   | 6               |  |  |
| 16           | 6+                | 6                | 6                           | 6   | 60                          | 6-             | 7-             | 70             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 2                   | 2   | 7               | 7              | 1               | 1   | 3               |  |  |
| 17           | 6+                | 6                | 6                           | 7   | 6+                          | 60             | 7-             | 7-             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 3                   | 2   | 8               | 5              | 3               | 2   | 13              |  |  |
| 18           | 6+                | 6                | 6                           | 7   | 6+                          | 60             | 7-             | 6+             | 6  | 6              | 7              | 7              | 6                           | 6              | 6              | 6              | 0                   | (4) | 13              | 5              | 1               | 3   | 9               |  |  |
| 19           | 60                | 6                | 6                           | 6   | 6-                          | 50             | 7-             | 7-             | 5  | 4              | 6              | 6              | 6                           | 5              | 6              | 6              | (4)                 | 3   | 22              | 9              | (4)             | 3   | 23              |  |  |
| 20           | 60                | 6                | 6                           | 6   | 60                          | 50             | 6+             | 7-             | 6  | 5              | 7              | 7              | 6                           | 6              | 6              | 6              | 3                   | 3   | 17              | 7              | 3               | 3   | 16              |  |  |
| 21           | 6-                | 6                | 6                           | 6   | 6-                          | 4-             | 6+             | 7-             | 6  | 5              | 7              | 7              | 7                           | 5              | 6              | 6              | (4)                 | 1   | 13              | 5              | (4)             | 2   | 17              |  |  |
| 22           | 6+                | 6                | 6                           | 7   | 60                          | 60             | 7-             | 7-             | 6  | 5              | 7              | 7              | 7                           | 6              | 6              | 6              | 1                   | 2   | 5               | 5              | 1               | 1   | 4               |  |  |
| 23           | 7-                | 6                | 6                           | 7   | 6+                          | 60             | 7-             | 7-             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 1                   | 3   | 9               | 7              | 1               | 2   | 6               |  |  |
| 24           | 6-                | 6                | 6                           | 6   | 6-                          | 4+             | 6+             | 6+             | 6  | 5              | 6              | 7              | 6                           | 5              | 6              | 6              | (4)                 | 2   | 16              | 13             | (4)             | 1   | 13              |  |  |
| 25           | 6-                | 6                | 6                           | 6   | 6-                          | 4+             | 7-             | 70             | 6  | 4              | 6              | 7              | 7                           | 5              | 6              | 6              | 3                   | 2   | 12              | 11             | 2               | 1   | 8               |  |  |
| 26           | 6+                | 6                | 6                           | 6   | 60                          | 5+             | 70             | 70             | 6  | 5              | 7              | 7              | 7                           | 5              | 6              | 6              | 3                   | 1   | 8               | 7              | 2               | 1   | 7               |  |  |
| 27           | 6-                | 6                | 6                           | 6   | 60                          | 4+             | 6+             | 6+             | 6  | 6              | 7              | 7              | 6                           | 5              | 6              | 6              | 1                   | 2   | 5               | 3              | 2               | 1   | 5               |  |  |
| 28           | 6+                | 6                | 6                           | 6   | 60                          | 6-             | 7-             | 70             | 6  | 6              | 7              | 7              | 6                           | 6              | 6              | 6              | 1                   | 1   | 2               | 4              | 0               | 0   | 0               |  |  |
| 29           | 7-                | 6                | 6                           | 6   | 7-                          | 60             | 7-             | 7-             | 6  | 6              | 7              | 7              | 6                           | 6              | 6              | 6              | 2                   | 2   | 8               | 13             | 1               | 1   | 4               |  |  |
| 30           | 6+                | 6                | 6                           | 6   | 7-                          | 50             | 7-             | 7-             | 6  | 5              | 7              | 7              | 6                           | 6              | 6              | 6              | 3                   | 1   | 9               | 9              | 2               | 1   | 5               |  |  |
| 31           | 6+                | 6                | 6                           | 6   | 6-                          | 6-             | 7-             | 7-             | 6  | 5              | 7              | 7              | 7                           | 5              | 6              | 6              | 3                   | 1   | 8               | 7              | 3               | 2   | 12              |  |  |
| QUIET        |                   |                  |                             | P   | 19                          |                |                |                |  |                |                |                |                             | 19 19 22 26    |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | S   | 12                          |                |                |                |  |                |                |                |                             | 12 8 9 5       |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | U   | 0                           |                |                |                |  |                |                |                |                             | 0 0 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | F   | 0                           |                |                |                |  |                |                |                |                             | 0 0 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |
| DISTURBED    |                   |                  |                             | P   | 0                           |                |                |                |  |                |                |                |                             | 0 1 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | S   | 0                           |                |                |                |  |                |                |                |                             | 0 2 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | U   | 0                           |                |                |                |  |                |                |                |                             | 0 0 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |
|              |                   |                  |                             | F   | 0                           |                |                |                |  |                |                |                |                             | 0 1 0 0        |                |                |                     |     |                 |                |                 |     |                 |  |  |

1) THE ADVANCE Jc-FORECASTS ARE SCORED AGAINST THE AVERAGE HIGH LATITUDE WHOLE-DAY INDICES.

2) THE OBSERVED INDICES FOR THE NORTH PACIFIC ARE LOW WEIGHT BECAUSE OF INSUFFICIENT DATA AVAILABLE FOR THEIR PREPARATION.

3) THE PREDICTED A<sub>FR</sub> INDICES ARE ISSUED EACH WEDNESDAY FOR THE COMING SEVEN DAYS. THE VALUE FOR THE FIRST DAY OF EACH PREDICTION PERIOD IS UNDERScoreD.



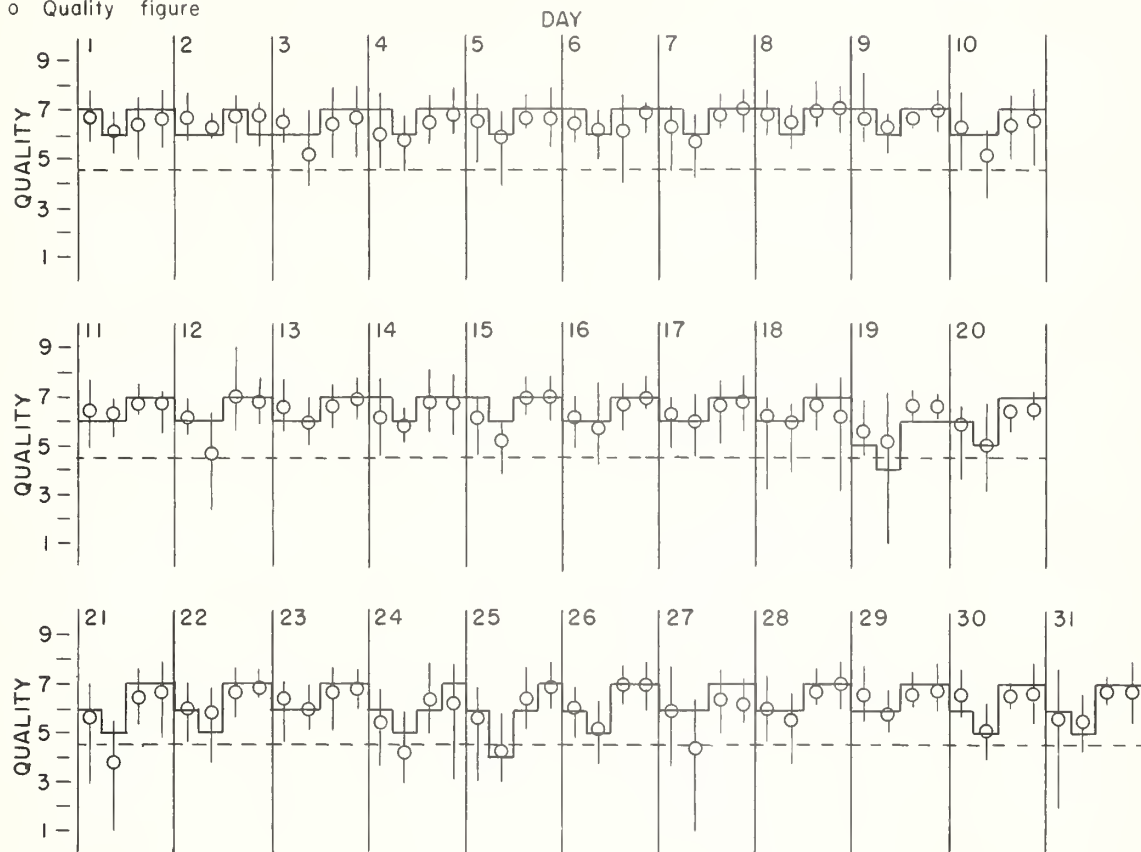
## NORTH ATLANTIC

AUGUST 1965

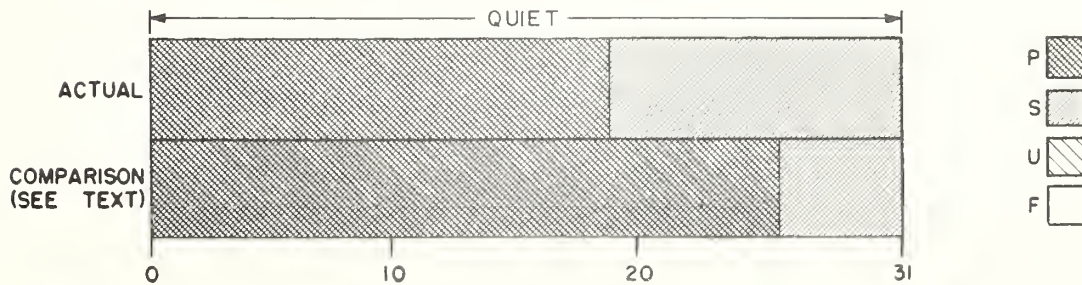
— Short-term forecast

| Range of reports

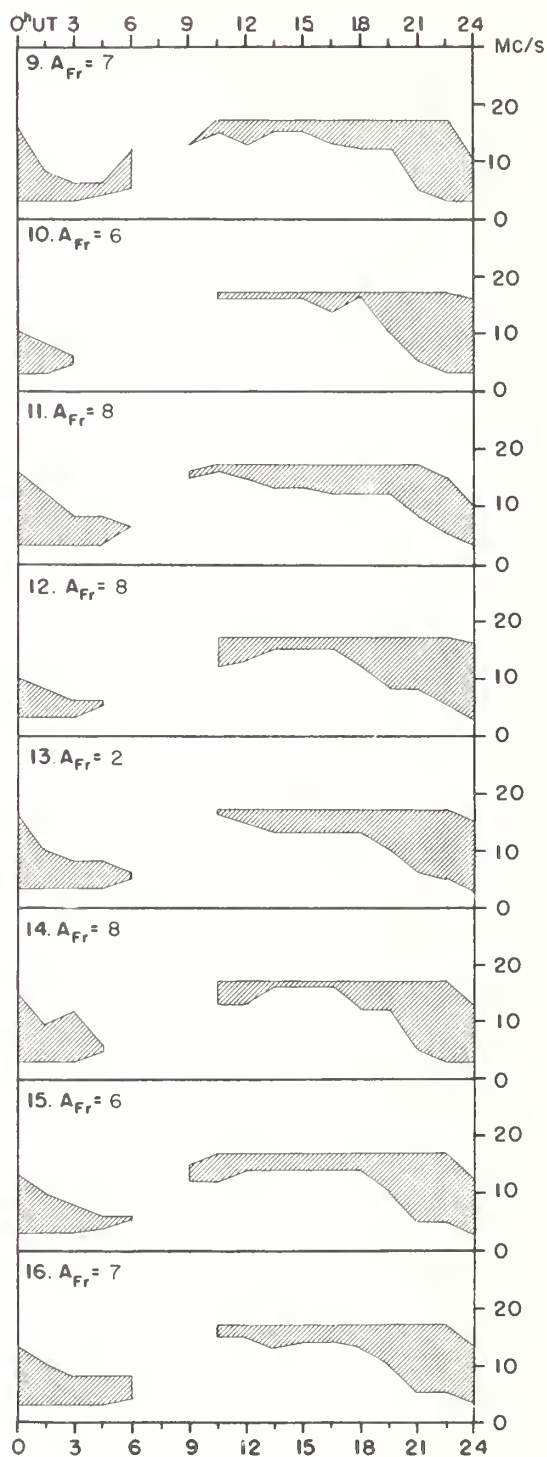
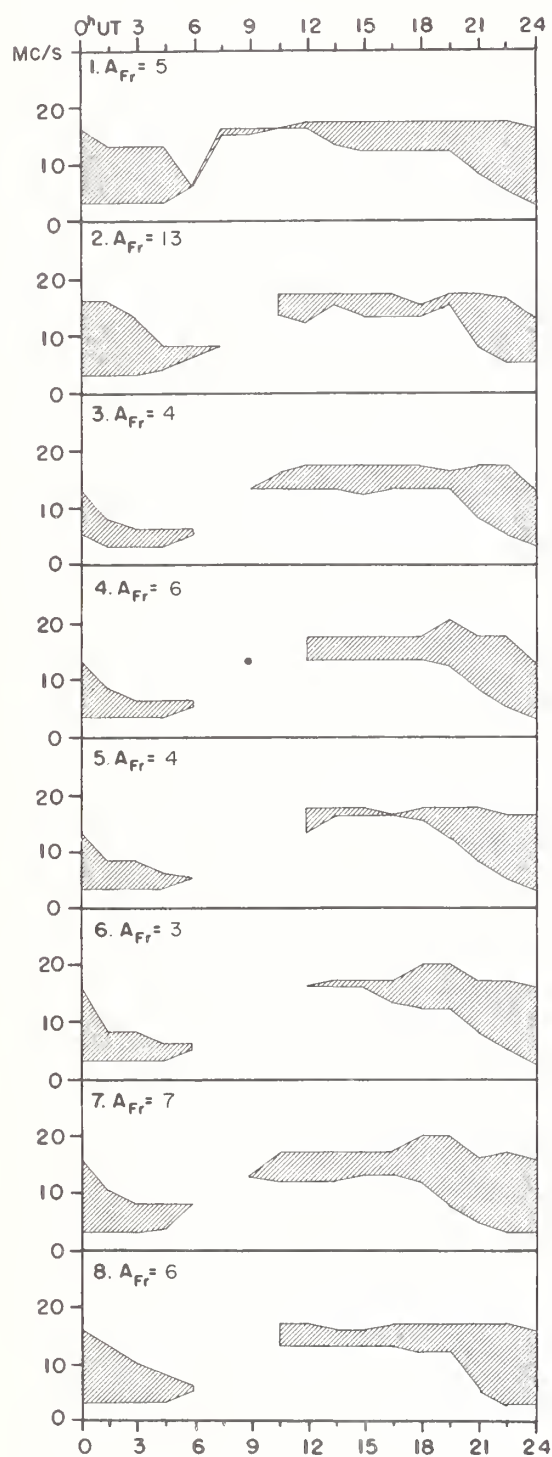
o Quality figure



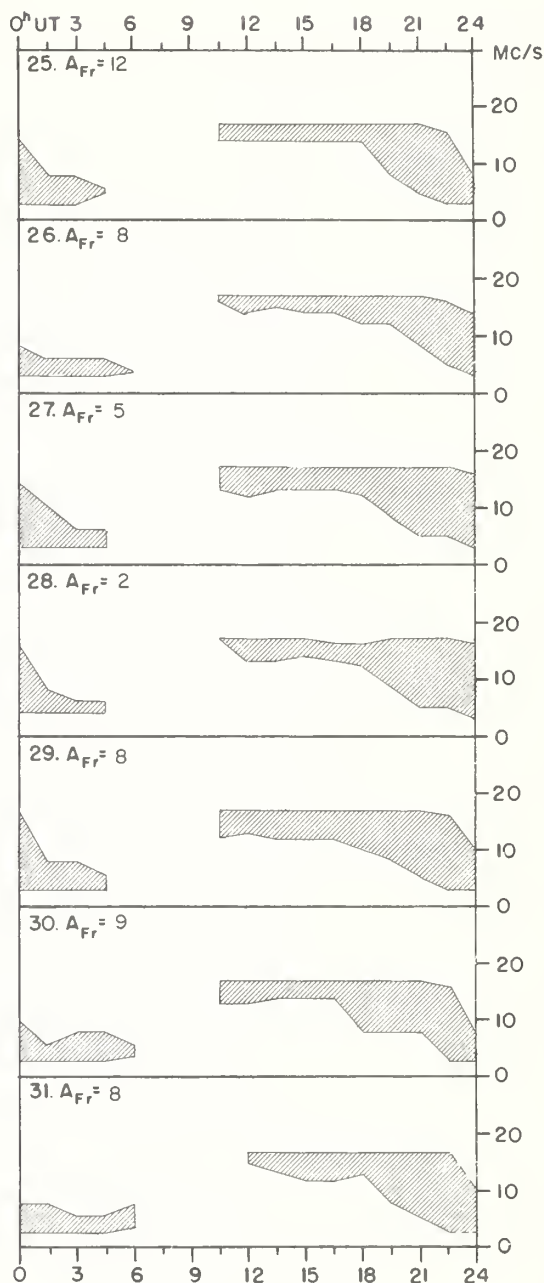
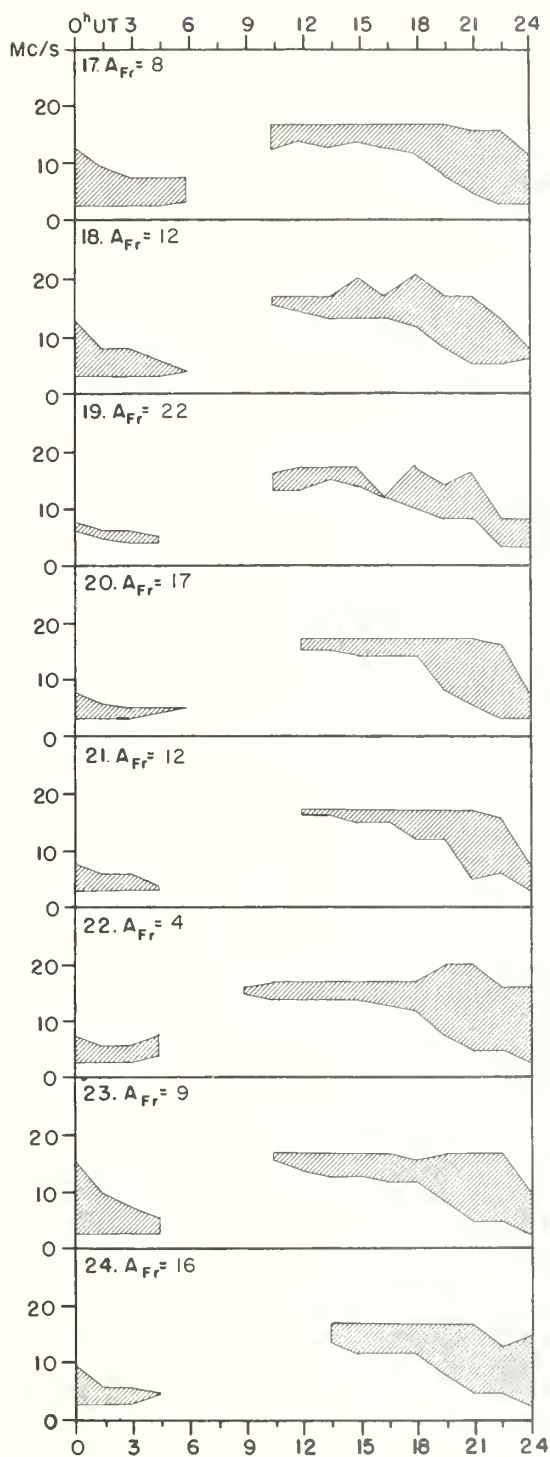
## HIGH LATITUDE



AUGUST 1965



AUGUST 1965



Adapted from Observations by Deutsches Bundespost

## IQSY ALERT PERIODS

INTERNATIONAL URSIGRAM  
AND WORLD DAYS SERVICE

SEPTEMBER 1965

| SEPT<br>1965 | TIME<br>OF ISSUE<br>UT | ADVANCE GEOPHYSICAL ALERT       | WORLDWIDE GEOPHYSICAL ALERT |                |        |                 |
|--------------|------------------------|---------------------------------|-----------------------------|----------------|--------|-----------------|
|              |                        |                                 | NO.                         | TYPE           | TIMING | ELABORATION     |
| 1            | 0400                   |                                 | 224                         | Solar Activity | Exists | Flares          |
| 5            | 1830                   | Ottawa, Solar Flare 05/1209     |                             |                |        |                 |
| 10           | 1505                   | Anacapri, Solar Flare 10/1058   |                             |                |        |                 |
| 27           | 0400                   |                                 | 225                         | Solar Activity | Exists | East Limb       |
| 28           | 0150                   | AGIWARN, Magnetic Storm 27/1655 |                             |                |        |                 |
|              | 0400                   |                                 | 226                         | Solar Activity | Exists |                 |
| 29           | 0400                   |                                 | 227                         | Solar Activity | Exists | Beta Gamma Spot |
| 30           | 0400                   |                                 | 228                         | Solar Activity | Exists |                 |
|              | 1613                   | Sac Peak, Solar Flare 30/1549   |                             |                |        |                 |



